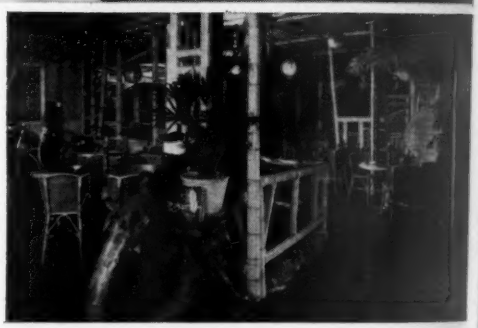
AMERICAN GAS ASSOCIATION

Monthly

OCTOBER
1957

Only GAS gives the precise heat required to insure the delicate flavor of Polynesian food



The Luau in Beverly Hills

You need a high, concentrated heat that cooks almost instantly to prepare Polynesian food. That's why Al Mathes and Steve Crane—the owners of the Luau in Beverly Hills—chose Gas for their modern kitchen. Only Gas has the precise control necessary for these exotic dishes.

Precise control isn't the only reason the Luau uses Gas. The cleanliness and modernity of Gas equipment is reflected in the stainless steel used throughout their kitchen. The versatility of this modern equipment assures the diners prompt, personal service.

If you plan to install a new kitchen or remodel or expand your present one, be sure to check with your Gas Company's Commercial Specialist and discuss the economies and results modern Gas equipment provides. *American Gas Association.*

See Playhouse 90 with Julia Meade on CBS-TV. Watch local listings for time and station. Sponsored by your Gas Company and the Gas Industry.

This view of the Needles to Newhall 30" pipeline on California desert was taken by Photographer Mel Jones

THE industry can expect a 29 per cent increase in the sale of gas by 1960, the A. G. A. Bureau of Statistics reports. The Bureau says sales by utilities and pipelines in 1960 will total 94 billion therms as compared to 72.9 therms sold in 1956. Details of this report begin on page 2. . . . Dallas, Texas' new Love Field Terminal, one of the world's largest airports, will be completely heated and cooled by gas air conditioning. Story and pictures begin on page 4. . . . Carl E. Gausman of Gausman and Moore, Inc., shows how one school in St. Louis Park, Minn., is heated by gas. The article points out that gas heating can be very desirable for school systems. . . . A new feature starts in this issue of the MONTHLY, a department we hope will prove helpful to gas industry's top management. Purpose is to tell the top men of the major activities of our committees and Sections and give a brief highlight of other industry activities. It's entitled "A. G. A. in Action" and begins on page 7. . . . Most gas utilities have felt the shortage of professional engineers. Believing that many of the engineer's duties can be handled by a well-trained technician, the MONTHLY has a story on pages 17 and 18 about the Gas Fuel Technology course taught at the Southern Technical Institute in Chamblee, Georgia. The school is a unit of the engineering extension division of Georgia Tech.

JAMES M. BEALL
DIRECTOR PUBLIC INFORMATION

WALTER H. DYER
EDITOR

RICHARD F. MULLIGAN
ART SUPERVISOR

MARGARET A. BLOCH
ASSISTANT EDITOR

EDITORIAL OFFICES:
AMERICAN GAS ASSOCIATION
420 LEXINGTON AVE., NEW YORK 17, N.Y.

CONTENTS FOR OCTOBER 1957

FEATURES

SEE GAS SALES UP 29 PER CENT BY 1960 2
GAS COOLS AND HEATS AN AIRPORT 4
GAS MOVIES ARE BETTER THAN EVER 8
GAS HEAT GOES TO HIGH SCHOOL—by Carl E. Gausman . . . 10
AIR CONDITIONING SALES IMPRESSIVE 13
1957 MAY BE SAFEST YEAR ON RECORD 15
SCHOOL TRAINS GAS TECHNICIANS 17
COLGATE CONTEST DRAWS THOUSANDS 19
A. G. A. FLIPCHART PROGRAM AIDS SAFETY EDUCATION 20
A SMALL UTILITY IN A COMEBACK—by Robert H. Willis 23
GASLIGHT: SOFT, SURE, SELLABLE 25

SECTIONS

ELIMINATE CAUSES FOR COMPLAINT (Accounting)—by J. H. Purdy . 27
COMBINED INDUSTRIAL GAS EXHIBIT TO COVER 270 FEET . . . 29
LECTURE SERIES ON HEAT IS READY FOR DISTRIBUTION (Industrial and Commercial) 29
DOCUMENT ON INDUSTRIAL OVENS AND DRYERS IS ISSUED . . 29
EFFECT OF SUPERCOMPRESSIBILITY (Operating)—by Jim Pruet . . 31
WASHER DETERMINES SIZE OF HEATER (Residential)—by John J. McKearin 33

DEPARTMENTS

A. G. A. IN ACTION 7
INDUSTRIAL RELATIONS ROUND-TABLE 16
MEET YOUR ASSOCIATION STAFF—Thomas J. Shanley 18
FACTS AND FIGURES 22
INDUSTRY NEWS 36
NEW PUBLICATIONS 37
HIGHLIGHTS OF CASES BEFORE FPC 38
PERSONAL AND OTHERWISE 41
CONVENTION CALENDAR 43
OBITUARY 43
PERSONNEL SERVICE 44

THIS MONTHLY IS INDEXED BY THE INDUSTRIAL ARTS INDEX

VOL. 39 NO. 10

• Subscription $3.00 a year - Published eleven times a year by the American Gas Association, Inc. Publication Office, 73 Main Street, Brattleboro, Vt. Publication is monthly except July and August which is a bi-monthly issue. Address communications to 420 Lexington Ave., New York 17, N. Y., including all manuscript copy for publication. The Association does not hold itself responsible for statements and opinions contained in papers and discussions appearing herein. Entered as Second Class Matter at the Post Office at Brattleboro, Vermont, Feb. 10th, 1922, under the Act of March 3, 1879. Cable addresses: American Gas Association, "Amerigas, New York"; American Gas Association Testing Laboratories, "Amerigaslab, Cleveland."

See gas sales up 29% by 1960

By BUREAU OF STATISTICS

American Gas Association

Sales of gas by utilities and pipelines in 1960 will total 94 billion therms, an increase of 28.9 per cent over actual sales of 72.9 billion therms in 1956. Supplies of gas from existing and planned facilities to meet these increased requirements will total 106.5 billion therms, equivalent to a gain of 28.4 per cent from the total supply of 83.0 billion therms available last year.

These data, together with related statistics on gas requirements, supplies, steel and other material needs of the industry and estimates of future construction expenditures are available in the American Gas Association report just published entitled *Gas Requirements and Supplies of the Gas Utility and Pipeline Industry.*

This report represents a revision of the material published by A. G. A. in each of three prior years and provides comprehensive forecasts of national and regional statistics on an annual basis through 1960 and on the peak day through the 1960-61 heating season. As such, it reveals changes in anticipated requirements and supplies through 1958 from those supplied to A. G. A. in prior years, and carries the forecasts forward two years further into the future. Data shown in the report relate to the entire industry and are based upon replies to questionnaires from 142 gas utilities and pipeline companies, representing 81 per cent of industry sales.

The industry has been aware of the importance of such statistics, particularly those relating to the need for steel and other material requirements which provide the basis for formulation of sound decisions regarding needed fabrication capacity of these products so essential to the continued growth of the gas industry.

The data are also useful in highlighting and locating the existence of possible shortages of gas and the need for remedial action, in determining the relative growth of market demand as a means of orienting marketing activities of appliance manufacturers, and in documenting the probable course of future growth of the gas industry for a variety of purposes.

Total peak day firm requirements for all sales and company use in 1960-61 will be 528.5 million therms while the presently indicated supply for the same period will total 530.9 million therms. A considerable improvement was noted in the relationship of supply to requirements, with 6,953 thousand therms of additional gas being required for the peak day in 1958-59. In the survey published two years ago, deficiencies of 9,505 thousand therms were reported for this same period.

Anticipated residential space heating requirements in 1960 will exceed those experienced in 1956 by 34 per cent and will represent 22 per cent of total annual demand of all customers of the industry in 1960. By 1960 the gas utility industry will provide service to an average of 21.6 million residential space heating customers, equivalent to a gain of 34 per cent in the number of households heated with gas when compared to the 1956 average of 16.1 million. (Projections of the numbers of customers are taken from a special study and are available from the Bureau of Statistics.) Peak day space heating requirements of residential customers are also expected to increase 34 per cent during the four years covered in the forecast to a total of more than 267 million therms in the 1960-61 heating season.

The greatest relative post-war increases in demand and in customer acceptance of gas for househeating have occurred in northern areas. This reflects the tremendous pipeline expansion program making more gas available to the metropolitan centers of the north, the relatively high heating saturation which has existed historically in the southern part of the country, and the greater consumption requirements per customer in the northern localities occasioned by longer and more severe winters.

Residential base load consumption, on an annual basis, is expected to increase approximately 20 per cent between 1956 and 1960, while commercial and firm industrial consumption will advance 21 per cent and 33 per cent, respectively. The growth of the latter two categories may be influenced to some extent by a more substantial growth in heating requirements; however, no statistical distinction is possible between heating and other requirements of commercial and industrial users.

The average annual growth of 5 per cent in residential base load consumption undoubtedly reflects the effectiveness of gas heating in encouraging customer acceptance of other

(Continued on page 12)

GAS INDUSTRY REQUIREMENTS AND SUPPLIES, 1957-1960

(Millions of Therms)

	Annual				Peak Day			
	1957	1958	1959	1960	1957-58	1958-59	1959-60	1960-61
REQUIREMENTS								
Residential—Total	26,398	28,172	29,984	31,747	251	270	288	305
Heating	16,972	18,305	19,695	21,028	218	235	251	267
Other	9,426	9,867	10,289	10,719	33	35	37	38
Commercial	6,776	7,134	7,452	7,753	57	59	62	66
Industrial and Other Firm	30,706	32,759	34,558	35,857	107	114	118	122
Sub-Total	63,880	68,065	71,994	75,357	415	443	468	493
Underground Storage—Net	678	1,191	888	445	—	—	—	—
Injection	5,587	6,351	6,466	6,538	—	—	—	—
Less Withdrawal	4,909	5,160	5,578	6,093	—	—	—	—
Other Firm Uses	7,905	8,642	8,866	9,063	33	34	35	36
Total Firm Requirements	72,463	77,898	81,748	84,865	448	477	503	529
SUPPLY								
Natural Gas—Total	91,707	98,494	102,967	105,976	437	463	483	502
Purchased and Produced	91,707	98,494	102,967	105,976	340	356	369	383
Peak Day Withdrawal from Underground Storage	—	—	—	—	97	107	114	119
Other Gas[a]	548	457	453	519	25	26	28	29
Total Supply	92,255	98,951	103,420	106,495	462	489	511	531
Excess Supply over Firm Requirements	19,856	21,270	22,061	22,154	19	19	17	13
Needed Additional Supply	64	217	389	524	5	7	9	11
Net Excess or (Needed Additional Supply)	19,792	21,053	21,672	21,630	14	12	8	2
Interruptible Deliveries—Total	19,062	20,608	21,462	21,621	9	9	9	9
Sales	16,291	17,349	18,394	18,653	8	8	8	8
Company Use	2,771	3,259	3,068	2,968	1	1	1	1
Total Firm Requirements and Interruptible Deliveries	91,525	98,506	103,210	106,486	457	486	512	538

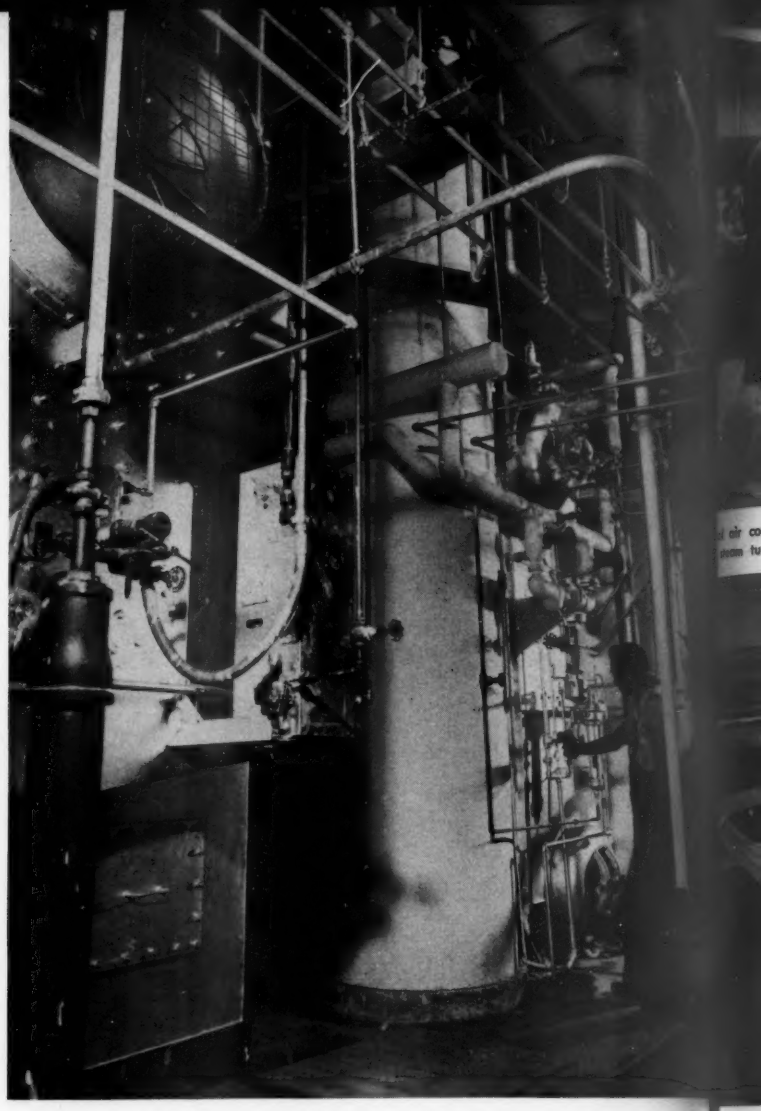
[a] Excludes natural gas used for reforming.

STEEL AND OTHER MATERIAL REQUIREMENTS OF THE GAS UTILITY AND PIPELINE INDUSTRY, 1956-1960

	ACTUAL		ESTIMATED			TOTAL
STEEL PIPE (Thousands of Tons)	1956	1957	1958	1959	1960	1957-60
Pipe Size						
16" and larger	666	1,807	1,492	1,302	1,146	5,747
6⅝" but less than 16"	425	491	520	620	665	2,296
Less than 6⅝"	360	380	431	549	641	2,001
Total Steel Pipe	1,451	2,678	2,443	2,471	2,452	10,044
Other Steel	14	18	24	28	28	98
Total Steel	1,465	2,696	2,467	2,499	2,480	10,142
Material						
Cast Iron (Thousands of Tons)	128	115	162	195	218	690
Copper (Tons)	1,460	1,823	2,534	3,321	2,619	10,297
Aluminum (Tons)	256	2,390	341	431	504	3,666

Dallas' new Love Field said to be most air conditioned air terminal in the world

Gas cools and heats an airport



Feed water-heater control mechanism for boilers that produce steam is checked

What is said to be the world's most air conditioned airport—Dallas' new Love Field Terminal—will be cooled and heated by gas-fired equipment. From front door to loading ramp, natural gas will provide a comfortable, man-made climate throughout the year. From the time a passenger enters the building until he walks from the loading gate the short distance to his plane, he will enjoy the comforts of gas air conditioning.

The complete air conditioning is only one of the many features of the new terminal into which operations are expected to move about Nov. 1. The $7,350,000 building has two-way moving sidewalks to cut down walking distances within the terminal, single-level operation which eliminate stairs and escalators, automatic doors at all points used by the public, wide canopies extending over the driveways to permit unloading or loading of automobile passengers with complete protection from the weather, a covered sidewalk serving the parking lot and theater-type spectators' lounge.

Gas steam turbine-driven compressors provide 1200 tons of cooling for almost 3½ million cubic feet in the building. In addition to the complete facilities for airline passengers there are three floors of office space and four floors of control tower functions.

The huge building is cooled by two 600-ton steam turbine-driven York centrifugal refrigeration machines. Two gas-fired water-tube boilers produce steam to drive the turbines operating the refrigeration machines. Chilled water is circulated throughout the building to provide the cooling.

The heart of the system is located in the equipment building, near the east loading ramp. Here are located the refrigeration units, the two large pumps to circulate the water and the two Babcock and Wilcox boilers. These mammoth boilers will carry their heaviest work load in the summer when they produce 30,000 pounds of steam hourly at 235 pounds of pressure per square inch to drive the steam tur-

air conditioning equipment consists of two 600-ton York compressors steam turbines. Control panel for unit and compressor is in foreground

Control panels for the boilers of air conditioning and heating system are closely watched. All operations of boilers can be regulated from the panels

The architect's drawing of new Love Field Terminal in Dallas, Texas, as it will appear to landing planes

bines which power the refrigeration machines. Each boiler is capable of developing 360 horsepower. In winter these boilers will produce hot water to warm the building thoroughly, but this will be a much lighter load than the summer operations require. The boilers will supply all hot water needs for the building throughout the year.

The cooling tower is located directly outside the equipment building. Constructed of redwood, it is 73 feet long, 32 feet wide and 28 feet tall. It can cool 3600 gallons of water a minute.

In addition to the pair of pumps in the cooling tower and the two large pumps that circulate the chilled water, there are sixteen secondary pumps to keep the water moving throughout the sprawling terminal. More than 70 air-handling units are required by the system, with twelve of these in the 27,000-square-foot lobby alone. These units will permit temperatures to be individually selected for all areas of the building.

Before selecting natural gas as the fuel for air conditioning as well as heating the new Love Field Terminal, city officials and engineers made a thorough study of all the systems that would be practical in this area, from the standpoint of efficiency as well as operating cost.

In a report on the gas-fired system, which required two weeks to compile, Lone Star Gas Company of Dallas pointed out that by using gas steam turbine-driven compressors rather than electric motor-driven compressors, the city will save in operating cost alone in excess of $12,250 annually and approximately $236,000 during the first 20 years. The report also showed that the slight additional investment represented by the gas-fired equipment would be paid out in less than one year.

This report was in addition to more than a year of preliminary discussions and conferences between Lone Star officials and city representatives, architects, mechanical engineers and others.

The summer and winter operations

for the new terminal will provide an annual load of approximately 91 million cubic feet for Lone Star, with consumption much higher in the summer months. The air conditioning season in Dallas extends through most of the spring and fall months as well as the summer.

In recent years Dallas has become one of the top air-traffic cities in the nation. Although the metropolitan area ranks twenty-first in population among the nation's metropolitan areas, it is eighth in number of enplaned air passengers, eighth in tons of enplaned air freight and sixth in tons of enplaned air mail. Dallas' Love Field is by far the busiest airport in the Southwest and one of the busiest in the nation.

There were more than one-million local—originating or terminating—passengers at Love Field in the year ended June 30, 1956. Counting the through pasengers who visit the terminal while their planes are on the ground and the non-local passengers who change planes there, the number of passengers using the terminal will total several million annually.

Located only 5½ miles from the center of downtown Dallas, the new terminal is more than six times as large as the old building, located just across the field. In addition, the new terminal has a separate air mail and air cargo building.

Gate positions for 26 airplanes are provided in the new location. No other air terminal in Texas has more than seventeen.

It has been estimated that the terminal will produce more than $850,000 in revenue during its first year of operation and by 1960 will be producing considerably more than $1 million annually. Love Field has long been one of the most successful airports in the nation from a financial standpoint. The use of gas as both a cooling and heating fuel will add to this success.

The air conditioning system was designed by the Dallas engineering firm of Zumwalt and Vinther, who have pioneered gas-fired steam turbine air conditioning in that area. They designed the system for the Federal Reserve Bank, the first in Dallas, and have been associated with many of the larger systems which have been installed in the city.

Installation was by Kieffer Plumbing and Heating Company, also of Dallas. Architects for the new terminal were Jack Corgan and the firm of Broad and Nelson, all of Dallas.

Robert W. Otto nominated as A.G.A. president

Robert W. Otto, chairman of the board, Laclede Gas Company, St. Louis, has been nominated as president of the American Gas Association to succeed C. H. Zachry, president of Southern Union Gas Company, Dallas, Texas.

A. W. Conover, president of Equitable Gas Company, Pittsburgh, originally was slated for the presidency but, because of illness, is unable to fill the office at this time. He has been nominated for the position of first vice-president. Mr. Otto had been chosen earlier as the candidate for first vice-president.

J. Theodore Wolfe, president of Baltimore Gas and Electric Company, is the nominee for second vice-president and Vincent T. Miles, treasurer of Long Island Lighting Company, Mineola, New York, has been renominated as treasurer.

Mr. Otto, former attorney general of the State of Missouri and former member of the Supreme Court of Missouri, joined Laclede in 1932 as general counsel. In 1942, he was made a vice-president and a member of the board of directors. He became president of Laclede in 1947 and chairman of the board in 1956.

A native of Washington, Missouri, he attended the University of Missouri and received his law degree from Northwestern University.

Gas men inspect suspensoid detectors

Gas utility representatives inspect the analytical instruments developed by the PAR Project "Suspensoids in Gas," during a two-day seminar held for this purpose at Arthur D. Little laboratories

Issue combustion study

a PAR activity

THE UTILIZATION of gas as a source of energy is inextricably linked with the combustion process.

Developments in the combustion field have been greatly accelerated with the advent of jet propulsion, and many are of direct interest and possible application to the gas industry.

Under the sponsorship of the PAR Plan of the American Gas Association, the Institute of Gas Technology has conducted an exhaustive search of the literature on the theory of combustion, combustion phenomena, experimental investigations of various phases of combustion, and certain fundamentals important to burner design.

The Institute of Gas Technology is affiliated with the Illinois Institute of Technology.

Results of the study are published in IGT Research Bulletin No. 15, *Fundamentals of Combustion of Gaseous Fuels—A Critical Literature Review* by S. A. Weil, R. T. Ellington, E. F. Searight and S. Hu, all of the Institute of Gas Technology.

New feature reports
major committee activities, brings
management capsule roundup

A.G.A. in action

The A. G. A. MONTHLY begins a new feature in this issue—a brief roundup of important Association activities. It is directed to top management, the men who seldom have time to read a publication from cover to cover. So that they will be able to keep abreast of their Association, we'll report on major committee activity, tell of action in the various sections, and bring to management other vital industry news in capsule form.

• The NARUC Committee of Accounts and Statistics will present to its Executive Committee their proposed revision of the uniform system of accounts for gas utilities at the Oct. 28 Executive Committee meeting in Memphis, Tennessee. In view of this, the **A. G. A. Accounting Section Managing Committee** has recommended to the Association's Board of Directors that the NARUC Executive Committee chairman be again reminded of the stand the gas industry formerly took when this subject was raised before the NARUC Convention in 1955. F. M. Banks, then A. G. A. president, wrote NARUC that the Association believes the present uniform system of accounts furnishes to the regulatory bodies sufficient data for effective regulation, that changes in systems of accounts should be prescribed as they may be required in special situations, and that he could find no good reason for introducing a completely revised system of accounts on a national basis, the adoption of which would entail considerable time and expense.

• A textile processing symposium, first of its kind to be arranged by the **Textile Processing Subcommittee,** was attended by approximately 80 textile and related business leaders in addition to gas industry representatives Sept. 17 at Greensboro, North Carolina. Hosts for the all-day meeting were the Public Service Company of North Carolina and the Piedmont Natural Gas Company. R. E. Ritter of the DuPont textile fibers division described the effect of heat on different synthetic fibers. He was assisted by F. J. Clendening of DuPont. Other speakers were R. C. LeMay of Philadelphia, coordinator of sales for Selas Corporation of America and R. H. Murray, secretary of the Industrial and Commercial Gas Section of A. G. A. A detailed story of the meeting will appear in the November issue of the A. G. A. MONTHLY.

• The latest word on the Southern Technical Institute (see feature article elsewhere in this issue) is that the **A. G. A. Task Committee on College Recruiting** has contacted Southern Tech to arrange for a meeting aimed at setting up a distribution option in the school's Gas Fuel Technology course. Thus, students would have a choice in selecting either the present curriculum or a curriculum more specifically directed toward employment in gas utilities. Southern Tech is the only accredited technical institute offering a course in gas fuel technology. It is a branch of Georgia Tech.

• The **Communications Committee** (Operating Section) has recommended that A. G. A. petition the Federal Communications Commission in Docket No. 12028 to authorize the use of "outage locators" by both the gas and electric industry. The petition will be filed by the gas industry's special representative with the FCC. The committee also recommended that A. G. A. file comment in Docket No. 11997 relating to the allocation of frequencies between 25 mc and 890 mc. The comment is now being prepared by the committee and will be forwarded to A. G. A. Headquarters by the chairman nominee.

• A. G. A.'s Fourth Financial Forum, meeting in Chicago under sponsorship of the **Committee on Gas Industry Finance and Economics,** heard presentations directed toward the outlook of a variety of topics vital to the industry. Included were talks on gas air conditioning, future natural gas supplies and prices, regulatory and legislative

(Continued on page 44)

Gas movies are better than ever

In the film Jimmy Savo and Tom Poston show a gas incinerator consumes just about every

Director gives cue for final scene of new A. G. A.-"Good Housekeeping" 16 mm. color film, "Pots and Pantomime"

When Jimmy Savo, slave to an ancient kitchen and master of the pantomime, gets together in a New Freedom Gas Kitchen with Tom Poston (the man who can't remember his name on the Steve Allen TV show), you have a really new departure in kitchen pictures that will delight your audiences.

This fourth in a series of American Gas Association sponsored kitchen movies is entitled "Pots and Pantomime." The movie, produced in cooperation with *Good Housekeeping* magazine, does the most complete selling job on gas appliances of any A. G. A. picture released to date. Other movies in this series have been "A Word to the Wives," "A Tale of Two Kitchens," and "Trying on Your New Home."

"Pots and Pantomime" is of 16½ minutes duration, and is on 16 millimeter film in Eastman color. It sells gas to your audience while it entertains them.

Automatic top burner heat control makes it for Tuesday Weld to prepare snacks for

New film "Pots and Pantomime" entertains the audience while selling gas and modern gas appliances

with cast are Kenneth Muldoon of A. G. A. (r.), Helen Kendall of Housekeeping" (nearest camera), Dolores Harrington of A. G. A. (l.)

This turkey supreme, just off rotisserie, is final touch in convincing Jimmy Savo that a new automatic gas range offers perfection every time

Imagine Jimmy Savo pantomiming his actions as he would act in his old kitchen while being introduced to a family in their New Freedom Gas Kitchen. Besides Savo and Poston, there is Tuesday Weld, the beautiful, young actress already considered a certainty to become one of tomorrow's fine stars, who plays the teen-age daughter in the Williams family, owners of the New Freedom Gas Kitchen. Others in the cast are Claudia Morgan, Phillip Foster, Nellie Burt and Kevin Coughlin.

The movie was shot at the 20th Century-Fox Studios in New York City and was produced by Telamerica, Inc. Besides A. G. A. and *Good Housekeeping*, sponsors are Republic Steel Kitchens, Cribben & Sexton Universal Gas Range and Universal Gas Incinerator, Ruud Gas Water Heater, and the Kitchen Aid Dishwasher by Hobart Manufacturing Company.

The plot is a simple enough one, but gets across the point of the convenience of owning a New Freedom Gas Kitchen. Jimmy Savo is at his best, smoking his cigar butts, handing out lollipops, and as usual will win over the hearts of your audience. The movie has a "happy ending" for the gas industry as Jimmy indicates he plans to junk his old kitchen and replace it with a New Freedom Gas Kitchen.

A sideline to the film is the fact that Republic Steel Kitchens has begun an 11-week tour covering 12 major markets in cooperation with local gas utilities in which the kitchen-laundry used in the film will be on display. The kitchen-laundry was designed by *Good Housekeeping* and built by Republic Steel Kitchens. In addition to the display, the film will be shown to audiences during the tour.

Guests will receive reprints of an eight-page article appearing in the September issue of *Good Housekeeping* which describes the kitchen-laundry in detail. Republic Steel is sponsoring a 13-week series of newspaper ads in each city on the tour route, tying in with the open house program. The ads are scheduled for Sunday's women's pages. Republic dealers are sponsoring similar ads, and in many cases the gas companies are promoting the program on their own radio and television programs and through newspaper ads of their own.

The tour is to cover Cleveland, Memphis, St. Louis, Minneapolis, Chicago, Pittsburgh, Columbus, Baltimore, New York, Hartford and Boston before it winds up in Buffalo on Nov. 26.

The film may be purchased for $135. Companies desiring complete information on the new film should write to Kenneth F. Muldoon, manager, New Freedom Kitchen and Laundry Bureau, American Gas Association, 420 Lexington Avenue, New York 17, New York.

wife of Republic's L. M. Hammer does some rooting for the kitchen in the film. This trailer truck carry the New Freedom Gas Kitchen to 12 major United States markets for an 11-week tour

Claudia Morgan welcomes Helen Kendall's thorough explanation of advantages of new automatic dryer

Multiple, individual counterflow furnaces heat classrooms in 800-boy school at St. Louis Park, Minnesota

Gas heat goes to high school

An outside view of school shows furnace flues through the roof. Combustion air and fresh air louvers show in glass block panels. The gas risers into the furnace room can be exposed. The school for 800 boys opened in 1956

By CARL E. GAUSMAN

Gausman & Moore, Inc.
Consulting Engineers
St. Paul 1, Minn.

The Benilde High School at St. Louis Park, Minnesota, owned and conducted by the Brothers of the Christian Schools, is heated by residential type gas fired forced warm air furnaces. A faculty residence for the brothers adjoins the school and is heated by a gas fired hot water boiler with forced circulation to baseboard radiators.

The school was opened in September, 1956 and is presently equipped to provide for approximately 800 boys. The school contains 15 classrooms, two science laboratories, audio visual room, cafeteria, woodworking, machine and electrical shops, library, gymnasium-auditorium and administrative office.

The school was designed by B. J. Knowles Company, architects, St. Paul, with T. Ewing Shelton of Little Rock, Arkansas, as consultant, and is known as a "Maximlite" school. The heating, plumbing, ventilation and electrical installations were designed by Gausman and Moore, Inc., consulting engineers, St. Paul.

The heating system for the classrooms consists of a counterflow gas fired forced warm air residential type furnace which supplies heated air through a factory-built shelving system with built-in duct in the bottom and back part of the shelving with sup-

Each of the furnaces is located in its own fire proof room entirely segregated from the rest of the building. These rooms take outside air for combustion through permanent louvers which cannot be closed. Above are examples

ply air registers located on the top of the shelving at the window stool supplying air up under the windows along the entire outside wall of the classroom.

Air to be recirculated is drawn in through a grille in the wall of the furnace room near the ceiling and then mixed with outdoor air, then filtered and heated and supplied to the room again. Excess air is vented out into the corridor through door louvers and then exhausted through toilets or general exhausts in the building.

The control for the heating system is as follows:

A switch marked day-night is provided for each classroom furnace. When in the day position, the furnace fan operates continuously and the fresh air and recirculated air quantities are automatically controlled by means of a duct thermostat which positions motorized fresh air and recirculating dampers to maintain a fixed mixed air temperature, approximately 55 degrees to 60 degrees.

The room thermostat cycles the gas burner on and off to maintain the room temperature at the thermostat setting. When the room thermostat is satisfied, the air delivery temperature is gradually dropped to the fresh air, recirculated air mixture temperature of 55 degrees to 60 degrees. The air is introduced into the room so that it does not cause drafty conditions and fresh outdoor air is always being supplied to the room.

When the day-night switch is in night position, the fresh air damper is closed, the fan operates intermittently controlled by a bonnetstat and the gas burner controlled by the room thermostat similar to the standard house cycle of control for a residential furnace.

Generally, two furnaces are located in one furnace room between two classrooms. These furnace rooms are isolated completely from the classrooms by use of fire dampers in the recirculating air and supply air ducts through the furnace room walls and a labeled fire door is provided for access to the furnace room through one of the classrooms. Combustion air and fresh air for the classrooms are provided for by fixed louvers built into the outside wall of the furnace room.

The gas for the building heating, water heating and cooking for both the school and Brothers' residence is natural gas and is metered in a separate meter house where the gas is also reduced in pressure to approximately 5 and ½ inches of water pressure. The gas is then distributed through underground piping to the two buildings. The gas to the residence is piped directly into the basement and into the boiler room. The gas for the school is piped around the perimeter of the building underground.

A riser is provided at each furnace room where the gas pipe enters the furnace room through the wall, a few inches above the floor line. A flexible Dresser coupling is provided at each riser.

The piping is hung from the foundation wall and is welded. Drain pockets are located at the low points of the distribution system. Gas piping to interior locations such as the laboratories is located in underfloor pipe sleeves with vented openings where the gas pipe enters the room. The sleeves are located so that the piping can be removed and new piping installed if a leak should ever occur in the piping.

The brothers have been very satisfied with the heating installation and are particularly pleased with the individual complete heating plant feature of each classroom. Each brother has complete control of the operation of the furnace heating his classroom independent of any other classrooms.

Offers air conditioning

NORTHERN ILLINOIS Gas Company has announced plans to provide a maximum of 500 customers with year-round gas air conditioning service on an experimental basis. This program was petitioned for and recently approved in anticipation of future additional supplies of natural gas. Opportunity to take advantage of the gas company's experimental plan will be initially offered customers on the utility's space heat waiting list on a first-come, first served basis. The intent of this program is for the gas company to gain broad knowledge and experience in the field with respect to maintenance, service and overall general performance of the year-round home conditioning units.

Honored for safety

TWO DEPARTMENTS of the Hope Natural Gas Company, Clarksburg, West Virginia, have been awarded A. G. A. Safety Merit Awards. They are the Clarksburg office and garage, with a total of 2,894,484 man-hours without a disabling injury, and the engineering department, with a total of 2,014,866 man-hours without a disabling injury.

The engineering department has, in fact, had no disabling injuries since it was first formed in May 1904. The Safety Merit Awards were presented to employees of both groups at a special dinner held in their honor. About 70 employees and guests were present.

New booklet

JUST OFF THE PRESS is a booklet discussing from the historical angle the theory that the three branches of the federal government are usurping power not delegated to them by the Constitution. The author—a member of the New York State Bar and a student of constitutional history—feels that "usurpation of power is the root-cause of much, if not most, of our generation's governmental troubles in the U. S., and to remedy the situation the people's attention must be focused effectively on this root-cause rather than on mere symptoms." *Usurpers—Foes of Man* by Harold Long may be obtained for $1 a copy from the Post Printing Co., 18 Beekman St., New York, New York.

See gas sales up

(Continued from page 3)

residential appliances, together with augmented and more effective industry promotional efforts.

On an annual basis firm industrial requirements will account for 38 per cent of total industry requirements in 1960 but will contribute only 24 per cent to the peak day requirements during the 1960-61 heating season. On the other hand, residential heating requirements, which will be responsible for only 22 per cent of total annual requirements during the last year of the forecast, will represent 53 per cent of peak day needs.

Sales of gas to interruptible customers are expected to increase from 14.5 billion therms in 1956 to 18.7 billion therms in 1960. Further growth in such sales is limited by the ever-increasing utilization of underground storage facilities for meeting the peak day demand imposed by househeating requirements. Increasing use of these facilities permits fuller year-round utilization of pipeline capacities and more effective sales to consumers by distributing companies.

It is estimated that $352 million will be expended during the next four years on underground storage projects, with a peak of $149 million being reached in 1960. Anticipated withdrawals during 1960 will aggregate 6.1 billion therms while on the 1960-61 peak day the expected underground storage withdrawals of 119 million therms will represent more than 22 per cent of the total available supply of gas from all sources, for the entire industry.

To meet the increased demand for its service the industry will require 10.0 million tons of steel pipe during 1957-60. Of this amount 5.7 million tons will be in the form of pipe of 16-inch diameter and over. Steel pipe with an outside diameter of 30 inches will account for nearly one-fourth of industry requirements. These larger sized pipes are primarily used in the construction of pipelines to transport gas from field sources to market areas.

Non-pipe steel requirements for production, pumping equipment, and all other functions are estimated at 98 thousand tons during the four years covered by the forecast. Cast iron requirements are estimated at 690 thousand tons during 1957-60 primarily for use by distribution companies. Copper requirements are estimated at 10.3 thousand tons and aluminum requirements are anticipated to be 3.7 thousand tons during the same period.

Additional details, including regional statistics, are available in the complete report which may be obtained from the Bureau of Statistics at a cost of $2.00 each.

Air conditioning sales impressive

New Servel air conditioning owner proven competitor in field

Directing Arkansas Louisiana's all-year gas air conditioning sales are B. E. Harrell (l.), vice-president, and H. L. Baker, director of the department

Combining professional "hard sell" sales technique with cooperative efforts by employees and town managers, Arkansas Louisiana Gas Company has made an impressive record in 1957 in the sale of Servel natural gas air conditioning.

And written on the meter books of the Shreveport, Louisiana-based utility, which recently purchased Servel's air conditioning division, is the payoff for a concerted five-months campaign—increased summer gas load.

Ahead are follow-ups on a list of prospects that gets longer daily. These sales "leads" are turned in by employees, then are contacted by sales personnel.

Ahead, too, is the assurance that every natural gas year-round air conditioning unit owner will most likely remain a gas user, safe from the concentrated come-ons of the electric industry aimed at making inroads into the winter heating field.

"We figure that every gas air conditioning customer that we put on our line is one we have saved for the winter heating load and will not lose to the electric heat pump campaign," asserts B. E. Harrell, vice-president for gas supply, sales and sales promotion, who supervises the ALG air conditioning sales program.

The company already faces heat pump competition for winter heating. Three-fifths, or about 150,000 of the company's customers are in Arkansas. The electric utility serving most of the state where Arkansas Louisiana Gas customers live now is offering a reduced rate for heat pump users.

Bigger and more immediate competition, however, lies in the use of electricity for summer cooling. Boosting of the summer gas load to bring it nearer in size to the winter load is a main goal of the successful Arkansas Louisiana sales drive. A Servel official informed Arkansas-Louisiana in August that it led the nation in Servel sales.

The new gas load came from units placed in buildings ranging from homes to hospitals, from motels to kindergartens, for emphasis was not limited to one category of user. Besides regular year-round Servel units, the new load also resulted from substitution of gas engines for electric motors on compression systems, and from sales of packaged chillers and steam turbine-driven systems.

Incentives that gave the sales campaign extra interest for all concerned were established for sales personnel,

town managers, and other company employees. Outside the company, incentives for contractors were set up, too.

The air conditioning department was reorganized last March, with Herbert L. Baker, an experienced air conditioning engineer, appointed as director.

"One of the initial points we stressed in setting up our sales force was that instead of shifting some veteran distribution-operations people from other duties into sales, we went out and hired professionally-trained salesmen," Mr. Harrell says. The department formerly was part of the gas distribution department.

"We wanted men who knew how to sell," he added. Four salesmen were hired at Little Rock, Arkansas division headquarters, and two at Shreveport, where company general offices are located.

Besides selling on their own, the salesmen have been very helpful to town distribution managers who are actively promoting gas air conditioning in their respective areas.

Incentives for salesmen and town managers included dozens of handsome prizes, ranging from hand tools to TV sets. This program, a Belknap-Thompson project, was conducted from April 1 to July 4, and prizes were awarded on a basis of merit points racked up by the managers and salesmen. The cost of the prize program was divided between the company and Servel, Inc.

Leader of all town managers was B. L. Cearley, a veteran of the gas distribution department, who by Aug. 14 had sold 21 units in and around the town of Nashville, Arkansas. Nashville's 1950 population was 3,548.

To all employees, including town managers, who turn in a prospect who later becomes a purchaser of gas air conditioning, a cash bonus is awarded. This is a continuing program.

As an incentive for contractors, ALG will sell Servel units at cost if they are bought in lots of ten or more. This calls for no big cash outlay: The contractor is billed on each unit only after the contractor resells it.

Contractors also are furnished a duct layout, plus wiring and piping diagrams when they need them. The contractors welcome these, of course, since they represent a saving in time and money.

"Many contractors have told us that the low cost of operating natural gas air conditioning helps sell the houses they are building," Mr. Harrell reports.

Another incentive for the contractor is the company practice of publicizing new homes with gas units. One example is the publication of a widely-circulated booklet, *Broadmoor's Big Bargain,* which concerns the installation of 321 Servel units in a Little Rock residential area.

Facts and figures on low-cost gas operations, as well as testimonials from satisfied customers, are also in the booklet. Annual "Parade of Homes" participation is another example, when gas air conditioning units or all-gas houses are part of the project.

A prime asset in the program has been the fact that salesmen are well-versed on the product they are selling. Several sales schools have been held, not only for salesmen but for town managers. Servel representatives have assisted in these.

The salesmen go to the prospect armed with a sales presentation that stresses the benefits of a gas unit. They always refer the prospect to other users of the equipment, which is a definite aid in sales. Most customers like to tell other people about the low operating cost, as well as the little maintenance required, and excellent performance of their gas air conditioning units.

Two other points the salesmen use effectively: The company will service the equipment at any time, keeping a 24-hour maintenance staff, and the integrity of the company, a long-established utility, stands behind the product.

The salesman has technical information about the equipment in his folio, or readily available. But presently it is not a part of the sales formula at ALG. Mr. Harrell points out that the sales "pitch" boils down to one general question: What will the gas unit do for the customer? The answer is that it will save him money because it is an excellent unit that operates on natural gas, the lowest-cost fuel available in the area.

The salesmen are ready for the heat pump competition that is shaping up, too. They can show that the heat pump will continue to cost more to operate than does a gas unit, even in face of the reduced rate offered in Arkansas by an electric utility. They can point out that the pump is very noisy, is not a perfected piece of equipment but still experimental, and that a heat pump needs more maintenance than does a gas unit.

These all have proven to be effective points. The salesmen are ready to elaborate on the maintenance comparison, if the customer wants proof. For instance, they point to the fact that a Servel unit has no moving parts, while the heat pump has a complicated control system, it requires the circulation of more air in the heating cycle, and is subject to excessive breakdowns.

Besides direct contact of prospects by salesmen and town managers, the company has backed up the new program with extensive advertising. Emphasis during the summer was in newspaper advertising. Television and radio are now included, too, in the ad budget. Some ads contained prospect slips as an extra drawing card for prospects' names.

Wide distribution of the booklet on the Broadmoor housing development proved to be an aid, too. Salesmen and other employees use it to show actual operating facts in a mass concentration of Servel units as an effective sales point to bring a prospect into the category of customer.

The program will continue through the winter just as it has through the summer. The company on August 5 launched a dealer sales promotion program for gas appliances, but the air conditioning program will be carried on separately.

With the campaign still rolling at full speed after a very successful summer, company officials predict that sales for 1958 will outdistance those made in 1957.

American homemakers to discuss ideas on home planning

THE Congress on Better Living, composed of 100 American homemakers, meets at the Shoreham Hotel in Washington, D. C., Oct. 9-11, to discuss the features they want—or don't want—in their homes.

The group is a successor to the Women's Congress on Housing, instituted in 1956 by the U. S. Housing and Home Agency under the direction of Administrator Albert M. Cole. Newly named and newly sponsored by *McCall's* magazine with the cooperation of the federal government, it will be continued as an annual public service event.

McCall's has selected a group which typifies American women from the standpoints of family income ($4,000 to $9,000), geographical location, age, education, home ownership, husbands' occupations, and children.

1957 may be safest year on record

The gas industry is on its way to its safest year on record if a sampling of accident experience in the first six months of 1957 can be used as an indication.

Reports from 24 gas utility and pipeline companies, representing about 23 per cent of industry employees, showed an accident frequency rate of 7.83 disabling injuries per million man-hours of exposure. This compares with the industry-wide figure of 8.68 for all of 1956, which was the ninth consecutive year of improvement in the industry's safety record.

The sampling program, begun for the first time this year by the American Gas Association Accident Prevention Committee, was instituted in an attempt to determine the employee accident experience trend of the industry on a quarterly basis. The gas and pipeline companies sampled are represented by members of the Accident Prevention Committee.

Reports from 30 gas utilities and pipelines representing 31 per cent of industry employees during the year's first quarter indicated a frequency rate of 6.78 disabling injuries per million man-hours worked. The severity rate reported by these sample companies was 118 days charged to disabling injuries per million man-hours worked.

During the second quarter of 1957, employee accident reports from 26 gas utilities and pipeline companies showed a frequency rate of 7.25 disabling injuries per million man-hours worked.

The severity rate during the first half of 1957 was 132 days charged to disabling injuries per million man-hours worked. This is substantially lower than the 652 days charged to disabling injuries during 1956 because to-date no employee fatality or permanent total disability has been reported.

Data from 20 gas companies representing about 22 per cent of the industry indicated that the frequency of motor vehicle accidents during the first quarter was 1.93 per 100,000 vehicle-miles traveled. In the second quarter, 17 gas utilities and pipeline companies representing about 17 per cent of the industry's vehicles reported 1.58 accidents per 100,000 vehicle-miles traveled.

There were 14 reporting vehicle accident statistics in both quarters. They represented about 15 per cent of the industry's vehicles, and their cumulative six-months record indicates 1.67 accidents per 100,000 vehicle miles. This is somewhat higher than the rate of 1.45 reported by companies in 1956.

EMPLOYEE ACCIDENT EXPERIENCE IN THE GAS INDUSTRY DURING THE FIRST AND SECOND QUARTERS OF 1957

	1956	1957		
		1st Quarter	2nd Quarter	First Half of 1957
Number of reporting companies	407	30	26	24(a)
Average number of active employees	189,287	63,058	48,625	45,626
NUMBER OF INJURIES				
Fatality	23	0	0	0
Permanent total disability	3	0	0	0
Permanent partial disability	89	4	6	9
Temporary total disability	3,212	207	180	355
Total	3,327	211	186	364
DAYS CHARGED				
Fatality	138,000	0	0	0
Permanent total disability	18,000	0	0	0
Permanent partial disability	43,073	440	930	1,250
Temporary total disability	50,820	3,225	2,439	4,889
Total	249,893	3,665	3,369	6,139
Frequency rate	8.68	6.78	7.25	7.83
Severity rate	652	118	131	132
VEHICLE ACCIDENT STATISTICS				
Average number of employees	146,310	43,672	33,630	29,635
Number of vehicles	36,861	10,229	8,251	7,420
Vehicle-miles traveled (000)	434,116	31,493	27,071	47,295
Number of reportable accidents	6,304	607	427	792
Number of personal injuries	141	24	10	23
Accidents per 100,000 miles traveled	1.45	1.93	1.58	1.67

(a) Comparable companies reporting in both the first and second quarters of 1957.

Industrial relations round-table

Prepared by
A. G. A. Personnel Committee

Edited by W. T. Simmons
Assistant to the Personnel Manager
Philadelphia Electric Company

● **Train your own technicians**—Are you trapped in the engineer squeeze? Here is a plan for training your own technicians which helps to release engineers for engineers' work.

Men in training to be engineering aids and technicians take a 17-point program in Allis-Chalmers Manufacturing Company's training department at Milwaukee. It provides them with a simplified engineering background. Classroom sessions last three months, on-the-job training another three. By spring of this year 22 technicians had received training.

There appear to be two popular ways to relieve the acute shortage of technicians: Offer scholarships to high school seniors who, after a two-year pre-engineering college course, may seek jobs with the sponsoring company; or offer high school graduates in-plant orientation in basic engineering subjects. Allis-Chalmers chose the latter way. They considered it quicker, more to the point.

Candidates are selected from among high school science or mathematics graduates. They must qualify for college entrance, must have taken high school algebra, geometry, trigonometry, general science, physics, English, shop and mechanical drawing. Allis-Chalmers also administers a series of aptitude tests. After an applicant qualifies he is interviewed by F. W. Churchill, program supervisor.

Most instructors come from within the plant. But an occasional subject (like machine shop) is taught at a public vocational school. Allis-Chalmers pays the school for these services, furnishes tools and books. The progress of the students is appraised twice during the classroom phase, once during on-the-job phase.

After the classroom phase is completed the students are assigned to short-handed departments. If after a couple of months the trainee or the department is not happy with the arrangement, the trainee returns to training for a new assignment and additional training when necessary. The trainee remains on the training section's payroll for the entire six months.

Trainees work an eight-hour day. After the first six months their salary automatically goes up. This new rate continues no longer than an additional 12 months. At that time the trainee is promoted to a regular job classification in production, plant, or design engineering.

● **Using a movie as a training center**—Some old movie houses never die, according to Standard Pressed Steel Company, Philadelphia. They just fade into streamlined education centers for industry. SPS made this point when it recently converted a former theater into a modern, multi-purpose training and education center for its nearby plant.

A victim of television and the drive-ins, this motion picture theater seemed a natural to SPS when it sought a building to house a variety of training sessions, conferences, and business dinners for employees and for clients.

The front two-thirds of the building is still a theater—now re-equipped with 420 modern seats on an inclined surface. The back third has been leveled to form a lounge area large enough to accommodate conferences or formal dinners for 125 people.

The cost of the building was $45,000. SPS spent another $60,000 for overhaul and modernization of equipment. This is roughly two-thirds of what it would cost to build a comparable new auditorium. In addition it saved time. Two months from the decision to renovate, SPS had a completed training facility only one-half mile away from its plant location. The valuable building-site ground at its plant can be used for other action.

● **NLRB rulings**—*NLRB determination bars state hearings*—The filing of unfair labor practice charges before the NLRB, and the dismissal of those charges on their merits, prevents the State Labor Relations Board from taking jurisdiction and hearing the same charges, according to the N. Y. Supreme Court *(Fienberg Furniture Company* v. *Di Fede)*.

Extension-of-picketing policy jells at board—The unanimous National Labor Relations Board now adopts as a firm rule the view that when a union has a primary employer's permanent location at which it can air a dispute, it violates the Taft Act's secondary boycott provisions when it extends its picketing to trucks of the employer while they are making deliveries or pickups at secondary firms.

The basis of the rule, the Board states in a case involving Barry Controls, Inc., Watertown, Massachusetts, and the United Steelworkers, is that such secondary picketing "plainly reveals that it was designed, at least in part, to induce and encourage the employees of these secondary employers to engage in a concerted refusal in the course of their employment to handle (the primary employer's) freight with an object of forcing or requiring the secondary employers to discontinue doing business with (the primary employer) and that the respondents thereby violated Section 8(b)(4)(A) of the Act."

Determining the appropriate unit: a union dilemma!—If a union clearly represents a majority of the employees of a company, just how accurate must it be in designating the "appropriate" unit in which to bargain? An NLRB ruling required a degree of accuracy that startled the union and freed the employer of a refusal to bargain charge (Washington Coca-Cola Bottling Works, Inc.).

The union claimed that it represented a majority of the employer's "drivers and driver-salesmen" and requested recognition. The company did not question the appropriateness of the unit proposed but merely rejected all requests for bargaining. The employees went on strike and the union filed charges of refusal to bargain.

The NLRB decided that the appropriate unit consisted of "driver-salesmen, full service drivers, cup route drivers, and salesmen-trainees." Although the union represented 39 out of the 58 employees in this unit, the Board ruled that the unit in which bargaining was requested was substantially different from the unit found appropriate and concluded that a proper bargaining demand had never been made. The refusal-to-bargain charge was dismissed and the striking employees were denied reinstatement and back pay.

The outstanding feature of the Board's decision was that the omitted categories (full service drivers, cup route drivers and salesmen-trainees) were in training to be driver-salesmen and the Board deemed their omission fatal, notwithstanding that a bargaining unit usually would include apprentices though not specifically stated in the demand for recognition.

The Board's strict view of the union's description of the appropriate bargaining unit puts a union in something of a dilemma: (1) If it asks for an election after a refusal to bargain, it gives up the right to file refusal-to-bargain charges (the election petition is a concession that there is a legitimate representation question); (2) If it first files a refusal-to-bargain charge and loses out as in this case, by the time an election is held it may have lost its majority through lapse of time and loss of prestige.

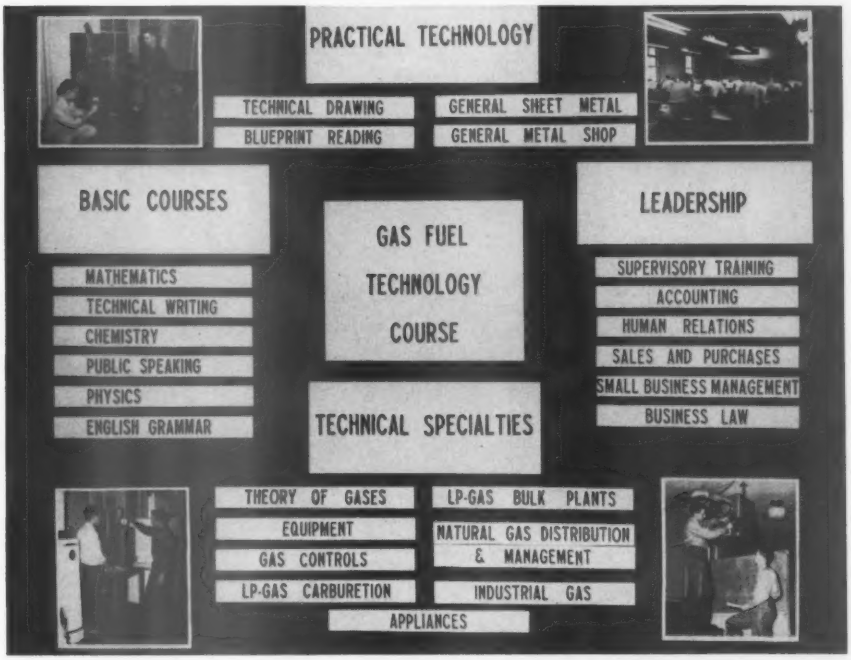
● **Court decision**—*AFL-CIO Field Organizers' Union asks NLRB for Taft Act election*—The field organizers of AFL-CIO who have formed a union for the purposes of collective bargaining with AFL-CIO President George Meany, filed a petition with the National Labor Relations Board recently for a representation election.

There are about 200 organizers; they have named their union the Field Representatives Federation. The organization was begun last March. Representatives met with Meany in July, and apparently did not succeed in obtaining recognition in the absence of an NLRB certification.

The Supreme Court ruled last May that unions should be treated by NLRB as "employers" under the Act in connection with matters affecting employees of a union.

AFL-CIO organizers are stationed throughout the country and any Board election would have to be held on a national basis.

School trains gas technicians



The above chart lists Gas Fuel Technology course outline; photos are of the school's students

Modern technical development largely is the result of a team composed of (1) the professional engineer, (2) the engineering technician, and (3) the vocational specialist or craftsman.

Each has an important place in the gas industry, especially today with America needing thousands of technical men to carry on in the development of our complex way of life.

Every industry is seeking the professional engineer and the gas industry is no exception. However, it should be pointed out that perhaps there are a great many jobs in our industry which could be done equally well by technicians who have specialized in gas training.

These men are the engineering technicians. They serve in the applied field of engineering and industry, and possess much of the know-how of the engineer and the gas industry. They do not usually have the concentrated training in mathematics, physics and other subjects needed to derive the mathematical equations or chemical formulas; but they are well-grounded in the fundamentals of these subjects so that they are capable of taking the plans of the engineer, scientist or inventor, and by the coordination of men, materials, and machines produce a finished product or job.

Where do you find such men? The gas industry, including manufacturers, suppliers and distributors, now has available graduates from a course of study known as "Gas Fuel Technology" at the Southern Technical Institute in Chamblee, Georgia. The school is a unit of the engineering extension division of Georgia Institute of Technology. The course was planned by industry and educational leaders as a specialized, two-year technical institute curriculum, designed to fortify the entire gas industry.

Established in 1949, it has been developed with the aid and counsel of a committee appointed by the LP-Gas Association, headed by Fred A. Rives of the Automatic Gas Company of Columbus, Georgia. The committee is still maintained by the LP-Gas Association with Mr. Rives at its head, functioning in an advisory capacity.

Although the course of study was designed specifically for the LP-Gas industry, several of its graduates have entered the natural and manufactured gas fields and some are with appliance manufacturers.

The graduate is prepared to go directly

into a large and progressive utility as a foreman, supervisor, or assistant engineer. He will have a rounded scientific education which includes physics, math, drawing and English, thus enabling him to meet and solve the ever-rising new problems to be encountered in his work. In addition, he is taught special subjects such as chemistry, machine and metal shops, fuels and burners, gas equipment, refrigeration, welding, safety standards, supervisory training and business management.

The Southern Tech graduate, who receives an Associate in Science degree at the successful conclusion of the two-year course, experiences actual study and witnesses on-the-job applications of the subject. He visits industrial installations and sees operations of all types. The future gas fuel technician sees during his training the laying of large natural gas lines and installation of meters, LP-Gas bulk plant operations and distribution methods, all types of appliance installation and servicing, air conditioning, and maintenance of shops and equipment. In general, he will absorb a part of the many industrial and educational opportunities presented in a large urban area such as neighboring Atlanta.

Actually, there are eight two-year technological courses offered. They are: building construction, civil, electrical, electronics and communications, gas fuel, heating and air conditioning, industrial, and mechanical.

The Technical Institute Committee of the Engineers' Council for Professional Development recently defined a technical institute such as that at Southern Tech. They said:

"Technical institute programs are intermediate between the high school and vocational school on the one hand and the engineering college on the other. . . . The purpose is to prepare individuals for positions auxiliary to but not in the field to professional engineering. Curricula are essentially technological in nature. They are based upon principles of science, require the use of mathematics beyond high school, and emphasize rational processes rather than rules of practice. Curricula are briefer, more intensive, and more specific in purpose than collegiate engineering curricula, though they lie in the same general fields of industry and engineering. Their aim is to prepare individuals or specific technical positions or lines of activity rather than for broad sectors of engineering practice. Training for artisanship is not included within the scope of education of technical institute type."

There are 30 members on the staff at Southern Tech. Each was selected with emphasis on his educational background, which was prefaced by at least a four-year college degree. The staff was trained at three types of colleges: (1) Colleges training in subject specialities such as math, physics, and English, usually liberal arts colleges offering A.B. and B.S. degrees; (2) Colleges prepared to train vocational teachers who teach shopwork and some technical specialties; (3) Engineering colleges from which come teachers of the technical subjects most closely related to the engineering field, such as mechanics and thermodynamics.

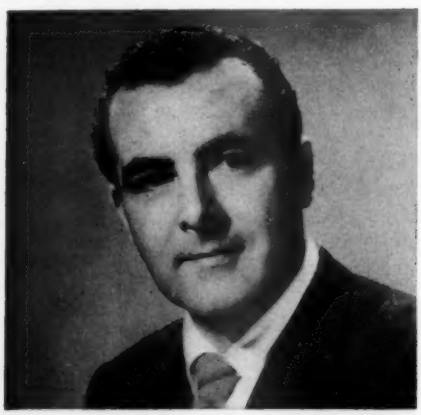
In addition to many shops and labs such as machine, welding, general metal, sheet metal, refrigeration, chemistry and physics, there are two small and one large specialized gas fuel laboratories. This makes possible testing, experimentation, installation and operation of every type of equipment using gas.

In the labs the men are taught the proper methods of installation and operation of every type of gas home appliance. They study industrial needs for both heating and cooling. Both natural gas and LP-Gas are available for use in study.

Successful graduates of the gas fuel technology course are now employed by engineering offices, producers and distributors of gas, manufacturers and distributors of appliances and equipment and in the operations of retail marketers.

A number of leading gas companies now include Southern Tech on their recruiting schedules. Gas utilities, hard-pressed for a sufficient number of professional engineers on their staffs, would do well to investigate the possibility of augmenting their staffs with engineering technicians.

Meet your Association staff



Thomas J. Shanley

In a recent Broadway satire, an actor wandered around a half-cluttered stage, poking his head into every nook and cranny. When asked what he was doing, he replied "I have a solution, and I'm searching for the problem." Satire or not, there are always those with questions and those with answers, and getting them together is a demanding job.

It's a job that demands diplomacy and know-how of the subject—and when the subject is accounting, A. G. A.'s Tom Shanley is the man to see. Mr. Shanley's office is a center of information for accounting men who want to write reports, read reports, supply data, request data, introduce new procedures, try out new procedures, and so forth. It is also a center of activity for accounting committees, of which he is the secretary.

As secretary of over twenty committees and their numerous subcommittees, he travels as much as one-third of the year, to cities and towns across the country. His favorite travel, though, is undoubtedly summer vacation travel, to his favorite area, Cape Cod. There, accompanied by his wife, son, daughter, and collie, he enjoys and excels in his favorite sport—horseback riding. During the winter, his favorite pastimes are bowling and cub scouting.

Mr. Shanley has been with A. G. A. since 1934, when he became a statistical clerk following studies at Columbia University. After several promotions in the Bureau of Statistics, he became assistant secretary of the Accounting Section in 1947.

He has been secretary of this Section since 1948. Duties? That multitude of unrelated tasks which can be accounted for in anyone's set of books under Making Life Simpler for Utility Accounting Personnel.

Colgate contest draws thousands

The nation-wide $216,000 "Happy Cleaning, Happy Washday" contest sponsored earlier this year by the Colgate-Palmolive Company and the American Gas Association is over and 201 prize winners are the richer for participating.

A top award of $15,000 cash plus a New Freedom gas laundry was awarded to Mrs. D. E. James of Chevy Chase, Maryland. The winner's entry was chosen from among thousands entered. Contestants were asked to complete in 25 words or less the statement, "I like (choice of Colgate-Palmolive product) because. . . ." Mrs. James' New Freedom Laundry consisted of a Philco-Bendix Duomatic washer-dryer, a Ruud automatic water heater, Mutschler cabinets with a sink and two automatic built-in Caloric burners. Reuben H. Donnelley was the judging agency.

Colgate-Palmolive spent $713,000 in advertising for the contest, the bulk of which went to *Parade, American Weekly,* and major network television.

The contest was a four-way cooperative effort among A. G. A., Colgate-Palmolive, the nation's participating gas utilities and appliance manufacturers. Manufacturers contributed their products as prizes to participating utilities.

Appliance manufacturers taking part included the following: Whirlpool-Seeger Corp., Caloric Appliance Corp., Easy Washing Machine, Philco-Bendix Corp., Cribben & Sexton Co., Hamilton Manufacturing Co., M. M. Hedges Manufacturing Co., Bryant Manufacturing Co., John Wood Co., The Cleveland Heater Co., The Hotstream Heater Co., Ruud Manufacturing Co., Lovekin Water Heater Co., A. O. Smith Corp., Clayton and Lambert Manufacturing Co., Bastain-Morley Co., Inc., Mission Appliance Corp., Combustion Engineering, Inc., Day and Night Division of Carrier Corp., American Standard, Toledo Desk and Fixtures, Mutschler Brothers Co., Nevamar Carefree Kitchens, and Yorktowne Kitchens.

The grand winner, Mrs. D. E. James of Chevy Chase, Maryland, receives a $15,000 from Congressman Hyde (Md.). Others are Gerald Mullins (l.) of A. G. A., and Leo M. Finkel, district manager for Colgate-Palmolive Company

Mrs. Marvin Wallace and daughters Diane (l.) and Claudia inspect built-in gas burners which were part of the multi-prize she won in the contest. Mrs. Wallace was one of 201 winners in the Colgate-Palmolive national event

A.G.A. flipchart program aids safety education

A graphic new approach to safety education in the gas industry has been taken by the American Gas Association with the publication of a nine-part safety flipchart program announced Sept. 18 at the ninth annual A. G. A. Accident Prevention Conference in St. Louis.

Prepared by the A. G. A. Accident Prevention Committee in cooperation with the National Safety Council, the flipcharts have been designed for use as a complete safety program or as supplemental material for safety programs already in operation.

They are intended to help the foremen and supervisors do a top-notch job of "selling" safety to employees. Use of the flipcharts should increase the effectiveness of the foreman's safety efforts so that he can increase the efficiency of the operation he supervises.

Each of the nine safety flipcharts includes 12 pages of simple narrative text and colorful cartoon-type illustrations dealing with accident prevention in the gas industry, which has improved its safety record annually for the past nine years.

C. R. Williams, safety director, The Gas Service Company of Kansas City, Missouri, and chairman, the A. G. A. Educational Subcommittee, summarized the nine flipcharts as follows:

1. Accidents Don't Just Happen—discusses most frequent types of gas industry accidents and how they can be prevented.

2. Lifting Safety—teaches efficient and safe procedures for lifting, handling and carrying typical gas industry materials.

3. Facts on Falls—shows how to prevent falls and discourages use of makeshift equipment and horseplay.

4. Hand Tool Safety—explains how to avoid hand and finger injuries from hammers, wrenches, chisels, knives, files and screwdrivers.

5. Excavating Equipment—emphasizes suggested safe practices in operating or working around various types of excavating equipment used in the gas industry.

6. Backing Can Be Safe—explains when and why gas industry motor vehicle drivers should avoid unnecessary backing. Covers hazards to look for, how to back safely, and safe backing speeds.

7. Aw—It's Nothing!—advises employees how to protect themselves from infection.

8. Fire Hazard Control—explains how fires can be prevented, discusses ignition sources and their control.

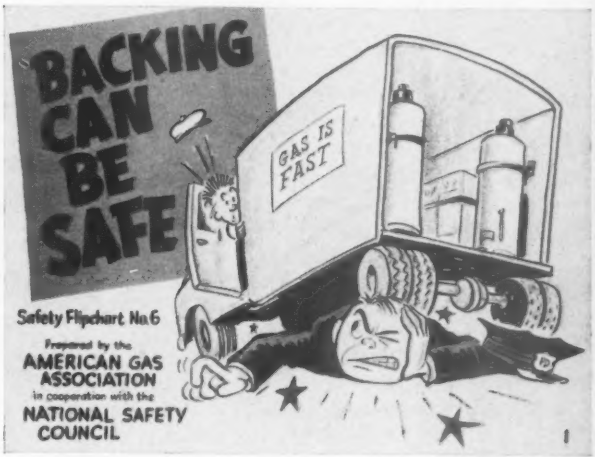
9. Safety Begins at Home—points out ways to help stop the off-the-job accident toll, at home, in recreation, and in traffic.

The complete safety flipchart kit, including an easel for presentation display, is available from the American Gas Association.

Lifting Safely
Safety Flipchart No. 2
Prepared by the
AMERICAN GAS ASSOCIATION
in cooperation with the
NATIONAL SAFETY COUNCIL

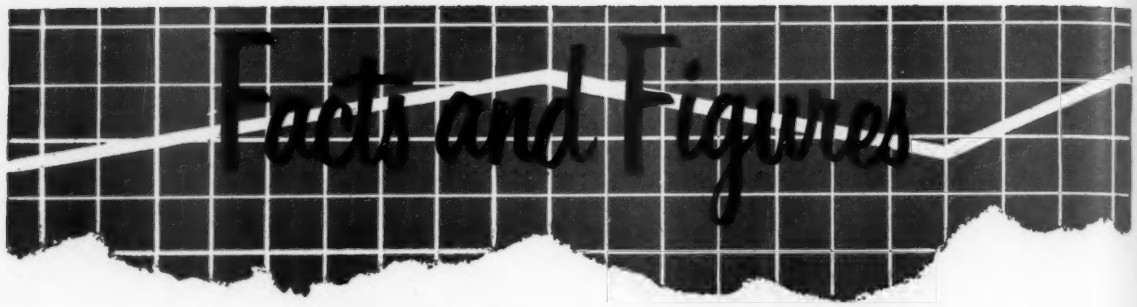
FACTS ON FALLS
Safety Flipchart No. 3
Prepared by the AMERICAN GAS ASSOCIATION
in cooperation with the NATIONAL SAFETY COUNCIL

Excavating
Equipment
SAFETY FLIPCHART NO. 5


BACKING CAN BE SAFE
GAS IS FAST
Safety Flipchart No. 6
Prepared by the
AMERICAN GAS ASSOCIATION
in cooperation with the
NATIONAL SAFETY COUNCIL

FIRE HAZARD CONTROL
BASIC UNDERSTANDING OF FIRE
A
FIRE
AIR
IGNITION
FUEL
B
AIR
NO FIRE
IGNITION
FUEL
C
SAFETY FLIPCHART No. 8

SAFETY BEGINS AT HOME
SAFETY FLIPCHART No. 9



Prepared by A. G. A. Bureau of Statistics

Gas utility and pipeline industry construction expenditures during the first half of 1957 totaled $1,254 million, up 43.5 per cent over expenditures of $874 million in the first half of 1956. Expenditures for the construction of new facilities and the extension of existing plant during the second quarter of this year hit $520 million. This was 35.8 per cent higher than expenditures made in the second quarter of last year and 46.8 per cent higher than first quarter 1957 expenditures.

Preliminary third and fourth quarter 1957 construction expenditures are budgeted in the amounts of $658 million and $596 million respectively. The total of 1957 estimated construction expenditures is $2,123 million, up considerably from the $1,552 million spent during 1956.

Total operating revenues of the gas utility and pipeline industry (including both pipeline sales for resale and distribution company sales to ultimate consumers) reached $6,051 million for the 12-month period ending June 30, 1957. This is an increase of 6.2 per cent above the same cumulative period of last year.

Total operating expenses increased at a much higher rate and thus affected the net income adversely. Net income during this period was $618 million, down slightly from the net of $619 million recorded for the 12 months ending June 30, 1956. The increased costs of labor and purchased gas and the inability to pass these higher costs on to the consumer because of the regulatory lag in rate case proceedings have been accounting for the 9.2 per cent increase in total operating expenses.

Total sales of the gas utility and

(Continued on page 35)

GAS INDUSTRY INCOME STATEMENT

(MILLIONS OF DOLLARS)
(REFERS TO ALL DISTRIBUTING UTILITIES AND PIPELINE COMPANIES)

	TOTAL INDUSTRY Twelve Months Ending June 30			NATURAL GAS Twelve Months Ending June 30		
	1957	1956	Per Cent Change	1957	1956	Per Cent Change
Total operating revenues	$6,051	$5,698	+ 6.2	$5,662	$5,271	+ 7.4
Operating expenses—operations	3,884	3,564	+ 9.0	3,634	3,295	+10.3
Operating expenses—maintenance	216	194	+11.3	202	179	+12.8
Operating expenses—total	4,100	3,758	+ 9.1	3,836	3,474	+10.4
Depreciation, retirements, depletion, amortization, etc.	416	381	+ 9.2	388	354	+ 9.6
Federal income taxes	428	503	—14.9	409	467	—12.4
All other taxes	310	266	+16.5	284	248	+14.5
Total taxes	738	769	— 4.0	693	715	— 3.1
Total operating revenue deductions	5,254	4,908	+ 7.0	4,917	4,543	+ 8.2
Net operating revenues	797	790	+ 0.9	745	728	+ 2.3
Other income	64	48	+33.3	64	41	+56.1
Gross income	861	838	+ 2.7	809	769	+ 5.2
Interest on long-term debt	238	212	+12.3	223	196	+13.8
Other income deductions	5	7	—28.6	5	6	—16.7
Total income deductions	243	219	+11.0	228	202	+12.9
Net income	618	619	— 0.2	581	567	+ 2.5

SALES OF GAS AND ELECTRIC RESIDENTIAL APPLIANCES DURING AUGUST 1957

(WITH PER CENT CHANGES FROM THE CORRESPONDING PERIOD OF THE PRIOR YEAR)

	August		July		First Seven Months Ending July 31	
	Units	Per Cent Change	Units	Per Cent Change	Units	Per Cent Change
RANGES (including built-ins)						
Gas	183,000	— 9.8	137,400	—13.5	1,108,300	—11.2
Electric	n.a.	—	88,700	—27.0	808,400	—20.1
WATER HEATERS						
Gas	206,800	—15.1	192,500	—17.0	1,524,700	—12.1
Electric	n.a.	—	64,000	—15.0	456,700	—16.8
GAS HEATING						
Furnaces	74,500	—25.3	60,000	—16.7	364,900	—14.4
Boilers	12,900	+16.2	9,300	+45.3	46,000	+ 6.0
Conversion Burners	23,400	—19.6	14,500	—28.2	64,800	—21.8
OIL-FIRED BURNER						
Installations	n.a.	—	54,403	—11.0	284,678	—12.8
DRYERS						
Gas	n.a.	—	18,350	—25.9	159,970	—14.0
Electric	n.a.	—	51,670	—44.3	374,050	—30.5

The Lake Shore Gas Company rises in mighty effort to equalize its competition

A small utility in a comeback

By ROBERT H. WILLIS

Vice-President and General Manager
The Lake Shore Gas Company
Ashtabula, Ohio

Imagine your service area without a single gas appliance dealer, and over 100 aggressive electric dealers backed by a strong electric utility promotion. This situation is not the result of a gas man's nightmare, but is a reasonable description of the problem faced by The Lake Shore Gas Company five years ago.

We serve a highly industrialized area of northeast Ohio, stretching east from Cleveland along the southern shore of Lake Erie to the Pennsylvania line. The area has a population of about 100,000. Ashtabula, Conneaut and Geneva are the principal cities.

The area includes two of the largest ore receiving ports on the Great Lakes. It has shown consistent growth since 1938, and is fast becoming one of the country's major chemical centers. Electric service is provided by The Cleveland Electric Illuminating Company, which also serves the greater Cleveland area.

After a local natural gas supply was depleted 30 years ago, our company did the unusual when it converted from natural to manufactured gas. Our source of fuel for 25 years was coke oven gas from a local chemical plant. The quantity was inadequate and the quality poor.

However, the company maintained a high saturation of all gas appliances for the next 10 years, through aggressive sales promotion. This trend continued until 1937, when our electric competition launched a strong appliance promotion program working through dealers without merchandising any appliances itself.

There was little we could do. Restrictions on the use of gas were in effect as demand exceeded the supply of coke oven gas. A blue-gas machine and propane-air plant was built, and its product mixed with the coke oven gas. This was a costly operation and the resulting fuel was of exceedingly poor quality, reflected in poor service at the burner tip.

We thus faced a period of declining customer acceptance and of severe limitations on promotion funds, at a time when the electric opposition was building up its promotion pressure year after year.

The result was that by the time natural gas from the Southwest arrived in late 1952, we had only half of the range and water heating load. Only 3½ per cent of our customers heated with gas, and refrigerator saturation was a bare 4 per cent. There was practically no dryer or incinerator load.

We also faced a rate problem. Our service area is surrounded by gas systems which have supplied natural gas continuously for over 50 years at rates among the lowest in the country. With limited saturation and new facilities, our rates to customers obviously had to be substantially higher until our growth caught up.

Even though we reduced rates with the arrival of natural gas, to pass along the entire savings to our customers, our rates were still approximately double those in Cleveland.

Many of the people in our area have moved there from neighboring cities with extremely low gas rates, and a few municipal officials did everything in their power to make gas rates an issue. The fact that our rates were extremely competitive in terms of other fuels was largely ignored.

We had more problems with a 10 per cent rate cut than most utilities have with a 10 per cent increase, but to cut rates further would have prevented us from promoting, expanding, improving service, building new plants, or raising the capital needed for all these undertakings which benefit the customer and hold the line on rates in the long run.

This was the backdrop in 1953 as we faced the future with an adequate supply of gas for the first time in several decades. In a sentence, we had to start from scratch.

Our first job was to improve our service. We enlarged our service force, added to our automotive equipment, put servicemen and meter readers in uniform, and improved the quality of our program of free service. Standards for appliance installations were strengthened, and we began inspecting all heating and water heating installations.

At the same time we inaugurated an aggressive public relations program through every medium available. Al-

though I could describe this program in some detail, I mention it here only for background in relation to our dealer sales program. It has had a bearing on whatever success we have experienced in our dealer relations.

The gas company, through three retail outlets, was the only gas appliance sales organization in the area. We were in competition with over 100 aggressive electric dealers who were provided with every sales support imaginable—salesmen's bonuses, cooperative advertising by the electric company and by manufacturers, an electric dealer contact force of one man for every 20 dealers, promotion literature, display material, newspaper and radio advertising by the carload.

We first found out all the facts about this electric utility program, and sought to analyze our own shortcomings. We had meetings with small groups of plumbers, heating dealers, and electric appliance dealers who had a gas potential, to seek a complete understanding of their views about our company, our own merchandising program, the benefits provided by our electrical competitor's dealer program, and the things expected of us.

The first answer was always that as long as we remained in the merchandising business we could expect no dealer cooperation. We thoroughly considered this point of view, but determined to follow the middle course of remaining in the appliance business ourselves but attempting to stimulate dealer activity. Had we discontinued appliance merchandising at that time, we would have done so in a vacuum and placed ourselves at the complete mercy of a competing electric utility.

However, we found most of the dealers to be reasonable, and to be interested in one of life's more interesting topics . . . money. We pointed out that we would like nothing better than to have dealers put us out of the appliance business, but that someone had to take over the job first. We also showed them that they were missing out on a major new sales potential.

In January of 1954, we held our first dinner meeting with 50 carefully selected potential gas appliance dealers and launched a new dealer relations program. Recognizing that dealers are motivated by dollars rather than a crusading spirit for any one fuel or utility, our program was soundly based on dollars and was labeled, "A New Era and New Dollars for Gas Equipment Dealers." Our program embodied 10 major points:

1. Announced a cooperative finance plan, whereby a group of banks would finance dealer paper on the same terms —both time and rate—as company dealer paper. We agreed to collect payments on the customer's monthly gas bill, and to forward them to the banks.

2. Provided direct bonus payments to dealers' salesmen for each gas appliance sale verified by a postcard report to our dealer representative and an inspection by the company. These bonuses were $20 for an automatic matchless range, $10 for non-matchless range, $7.50 bonus on a 30-gallon water heater and $10 on a 40-gallon heater during campaigns in February, March, September, and October. We had no bonus for clothes dryers, incinerators, heating or air conditioning equipment, but this year we began a $5 bonus on clothes dryers during spring and fall promotions.

3. Inaugurated a water heater rental program in which the dealer participated. We paid the dealer a fee of $15 per 30-gallon heater and $17.50 per 40-gallon heater rented, and another $25 if he installed the heater in accord with the program. This program was designed to acquaint customers with the fact that gas would heat their water at ⅓ the cost of electricity. Believe it or not, few customers realize this.

4. Started a dealer cooperative advertising program, assisted in preparation of copy and paid 40 per cent of all costs. All of this cooperative advertising was arranged during promotions and each of the ads contained cooperative advertising identifications for each appliance. We sought dealer cooperative advertising support from gas appliance manufacturers and distributors to supplement this program.

5. Undertook institutional advertising on a large scale as the backdrop for these dealer activities, refraining in this advertising from promoting appliances sold by the company. In fact, a number of ads have featured the names of all dealers who promote the particular appliance being pushed. Campaigns were coordinated with the A. G. A. program and supplemented by outdoor and theater advertising, service truck posters, office window displays, publicity and news releases, movies and talks at every opportunity, and an employee training program.

6. Provided free gas appliance installation in the homes of dealer salesmen, free gas installations for dealer floor displays, free demonstrations by our home service department in dealer stores, free window and floor display and promotional literature, free follow up by a home service representative on every dealer appliance sale, and we took over all appliance service after the sale.

7. Offered training courses for dealer salesmen, calling in manufacturers' representatives and service people as well as using our own sales organization. We contacted manufacturers of every type of appliance to arrange for new franchises with dealers and to achieve maximum support in original merchandise stock, advertising support, training, and complete liaison.

8. Attempted to provide installation service on a fixed pricing schedule for any dealer who had no installation crews of his own. These schedules probably did not completely cover our cost and have been changed from time to time with the rising cost of wages and materials. However, we are able at all times to keep dealers advised in advance about the cost of installing each appliance, so they can include this in the sales price in quoting "an exact price to the customer."

9. Our program includes many miscellaneous activities, and has been revised slightly from time to time to improve its operation and to hit hard where weaknesses were found. For instance, we arranged a cooperative TV weather program in which dealers have participated. We have had specific campaigns with bonuses for replacement of electric water heaters as well as water heater campaigns with trade-in allowances by the company for electric water heaters. We have inaugurated dryer promotions.

10. Most important of all, we organized a separate division of our sales department with the prime responsibility of carrying on continuing daily contact with all dealers. We have since added personnel to this department and expect it to expand again.

After hearing about all of these grandiose plans, you may wonder just how much the cost is . . . or would be in

(Continued on page 26)

Gaslight: soft, sure, sellable

At the turn of the century, *Elegance* wasn't the name of a perfume—it was a way of life. Across the continent, tall, stately homes surrounded by carefully tended gardens glowed under gaslighting.

It may be a desire to regain the elegance of the good old days. It may be a desire for distinction. But whatever it is, homeowners are now discovering that the radiant glow of gas light enhances their modern low-slung homes even more than it enhanced the lofty homes of a half-century ago.

From the viewpoint of the homeowner, the outdoor gas lamp is both attractive and functional. From the viewpoint of the gas industry, it is not only attractive and functional, but important —and for four good reasons.

First, it rates as a Number One advertising tool. A gas lamp glowing in the dusk or dark spells out G-A-S more effectively than a sign ten feet square.

Second, it is an ideal sales premium—a premium that spurs sales of larger appliances *and* sells gas.

Third, it is a base load appliance which consumes as much gas as the average domestic range. And unlike other appliances, it can often be sold in large quantities. A Southern Union Gas salesman, for instance, recently sold 35 Moonglow gas lamps—the equivalent of 35 ranges—to the Robin Hood Inn in Albuquerque, New Mexico.

And fourth, it is easy to sell. Once a gas lamp has been installed in an area, customers—both residential and commercial—ask for similar lamps. Cities that have discontinued gas lighting find that customer demand for old street lamps far exceeds the supply.

A recent issue of *Greater Pittsburgh,* publication of the Pittsburgh Chamber of Commerce, quotes R. T. McCrum, supervisor of commercial sales for Equitable Gas Company, as saying that 75 of the antique gas lamps formerly in use on Pittsburgh streets have now been located and are again in service throughout the Greater Pittsburgh area. Mr. McCrum, whose company is now marketing antique street lamps, added "Local and national demand is so high that the utility is tapping European sources for possible suppliers to meet the demand."

Greater Pittsburgh also reports that 13 residents in one area of that city have formed an association to maintain the gas street lamps in front of their homes.

Similarly, a special effort has been made by one homeowner to maintain the two last gas street lamps in New York City. They are situated on Macdougal Alley in Manhattan's Greenwich Village, and for years the gas bill has been footed, oddly enough, by the Consolidated Edison Company. "It's pure sentiment," a Con Edison representative said in a newspaper interview. "Just one of those things that a big company does for old sake's sake."

A Con Edison surprise encounter with gas lighting occurred just a few years ago. Con Edison servicemen entering an old (circa 1880) brownstone house in New York City to convert appliances to natural gas came upon an astonishing scene. Above the massive balustrade hung a gas lamp of amber-tinted crystal. Suspended from the lofty ceilings of the downstairs parlors were chandeliers of intricately wrought brass. Each embodied eighteen miniature candles surmounted by gas jets. The fixtures in the dining room and bedrooms were petal-shaped globes of white glass. A Welsbach lamp, with green shade, adorned the writing table in the back parlor. These gas lights comprised the only artificial lighting in the house.

The master of the house, a 69-year-old lawyer, was offered recommendations on changing the lighting. He nodded politely. "Gaslight," he said, "is soft and relaxing. And for reading, or playing Scrabble or gin rummy, a Welsbach burner is good enough for anybody."

The workmen then matter-of-factly converted the lighting fixtures to natural gas along with the kitchen range, in the only gaslit house in the heart of New York City.

Although gaslit interiors are rare, there are some—usually restaurants, less frequently homes—sprinkled across the country. The main supplier for indoor gas lighting is the General Gas Light Company, 202 North Park Avenue, Kalamazoo 11, Michigan, while the main supplier for gas street lamps is Welsbach Corporation, 1500 Walnut Street, Philadelphia 2, Pennsylvania.

The leader in the manufacture of the more common gas lights—the lamppost type—is the Moonglow Gas Light Company. Moonglow recently reported this incident, which occurred during the reign of hurricane Audrey.

All electricity in the area around Lake Charles, Louisiana, failed, but fortunately the Lake Charles office of the United Gas Corporation was able to

operate all night by using a live Moonglow demonstrator. This is particularly noteworthy because all the windows in the building had been blown out and the adjacent power lines were down. The incident has prompted A. D. Harper, district sales manager of that United Gas office, to consider promoting Moonglow gas lamps as emergency lighting.

Gas for emergency lighting has also been given consideration in another section of the globe. A year ago, when gas lighting was discontinued on Paris' Champs Elysees, a column in the *New York Herald Tribune* had this to report: "In the event of a power failure—no rare occurrence in Paris—the old Napoleon III still gracefully lining the curb will glimmer on."

Emergency, elegance, or nostalgia—whatever the reason, the homeowner enjoys having a gas lamp illuminating the entrance to his home, and gas companies should make the most of this desire. Keeping a supply in stock would certainly be called for.

Moonglow Gas Light Company offers the following special prices to gas companies, and all gas industry employees.

Flame type (warm, dancing flame): Price to utilities, $19.85, and suggested list price, $26.45. Mantle type (brighter, steady light): Price to utilities, $24.90, and suggested list price, $33.20. The price to utilities is reduced by five per cent when quantities of fifteen or more are purchased. For further details, contact the company at 151 Arvin Drive, San Antonio 9, Texas.

Utility in comeback

(Continued from page 24)

terms of your own operations.

Some of the costs are intangible and probably do not fall under sales promotion in any uniform system of accounts. However, most of the projects fall under sales expense, and an adequate comparison can be provided in terms of cost per customer.

Our sales promotion expenses averaged $2.62 per meter in our last year with manufactured gas. They totalled $4.21 per meter in the first year of our new dealer program, and reached $6.27 per meter last year. The dealer program thus has cost us about $3.65 a customer in additional sales promotion expenses.

However, this is more than offset by the increase in revenue, and sales promotion is now a smaller expense than ever before when measured as a percentage of revenue.

Our sales promotion expenses were 3.8 per cent of revenues in our last year with manufactured gas. The figure rose to 4.7 per cent in the first year of our dealer program. Then it began to fall, even though the dollar volume of expenses has increased materially year by year. In 1956, our promotion expenses were down to 3¾ per cent of sales, or less than in our last year with manufactured gas.

We hold annual seminars during which the key personnel of each major department analyze progress in the most recent five years and discuss plans for the next five, based on this analysis.

Certain facts stand out to provide some measure of the program's results, although it should be emphasized that these facts at the same time measure the company's total program for promotion and growth. These facts indicate that the results have been most significant, benefiting the company and its customers alike.

With an increasing dollar volume of sales promotion expense each year, the over-all percentage of revenue allocated to such expense can decline only if sales expand rapidly. Total therm sales of gas by our company in 1956 were 5¼ times what they were in 1952, our last year with manufactured gas. Residential and commercial sales have tripled. Our growth has been rapid by any standards, and that our sales executives feel the dealer program has had a major impact on this growth.

Instead of being a burden on the customer, the sales promotion program has been one of his best friends. Revenues per heat unit from residential customers have declined 33 per cent, falling from 23 cents a therm in 1952 to 15 cents in 1956. Commercial prices per therm have declined 22 per cent in the same period.

Part of this is due to lower unit rates for customers using additional gas as they add new appliances, particularly heating. Part is due to two rate cuts in addition to the one effective with the introduction of natural gas. With the rising expenses in all phases of utility operation during recent years, rate cuts obviously can result only from major increases in sales.

Another yardstick for measurement of success is the reaction of our competitors. I have previously mentioned that our electrical competitor had one dealer relations representative for each 20 dealers when we started our program. It now has one for every 4 dealers. In fact, the whole Eastern Division sales organization of the Cleveland Illuminating Company was completely reshuffled last year to combat our program.

Specific details on the actual number of gas appliances demonstrate not only the effectiveness of our program, but also the long road we have yet to travel.

In the last year of manufactured gas, appliance sales by dealers were so few that for all practical purposes we may say there were no dealer appliance sales. Our own company merchandise sales per thousand customers were as follows: ranges 10.4, water heaters 25.2, clothes driers 1.8, incinerators 1.6, house heating equipment 18.5 (impact of impending natural gas), Servel refrigerators 1.8.

Five years later company appliance sales per thousand customers showed the following results: ranges 13.6, water heaters 16.0 sold and 32.4 rented or total company water heaters 48.4, driers 6.6, incinerators 4.8, Servels 2.5, heating 26.

While company merchandise sales were thus doubling or tripling, dealer sales changed from none in 1952 to the following per thousand customers in 1956: ranges 14.1, water heater sales and rentals 46.6, driers 3.5, incinerators 3.6, Servels 0, heating 68.5.

Range sales have increased 166 per cent; water heater sales and rentals 277 per cent; driers 461 per cent; incinerators 425 per cent; house heating 417 per cent; and Servels 39 per cent. Such growth in the number of appliances on our lines would obviously have been impossible without substantial sales by dealers and cooperation from them. However, the degree of success so far indicates that our program is headed in the right direction and when expanded in future years will provide gas with its proper share of our market.

The single most disappointing aspect of our cooperative dealer program has been the apathy of some range manufacturers and the lack of follow through by their sales representatives. We understood and sympathized with many of

(Continued on page 30)

Eliminate cause of complaints

By J. H. PURDY

Manager, Customer Relations
Baltimore Gas and Electric Company

The nationwide spread of natural gas has introduced millions of people to this fuel. New suburban developments, many featuring pre-fabricated houses which go up almost overnight, have given a new urgency to the expansion of distribution systems. New automatic gas ranges that think for themselves have created new servicing needs.

Thus, in an industry on the march, new conditions require a new look at policies, procedures and practices. Otherwise, things may go wrong and customers may begin to think unfavorably of "the gas company." When customers have decided they don't like a gas company, it may be too late for the usual remedial measures. For this reason a company taking a new look at itself should not be seeking a better remedy to be applied after things have gone wrong but rather an inoculation for a complaint preventive.

Many causes of complaints can be eliminated when the company finds out what the customers dislike. This information can be obtained in at least two ways: one is the now familiar "survey in depth" which, properly conducted, tells *why* as well as *what;* the other is a scientific sampling and analysis of calls to the company to pinpoint the reason for the call and provide a basis for a study of what the company would have to do to make that call unnecessary.

After the areas of customer dissatisfaction are found, the company then knows what policies, practices and procedures may need revising. This examination can be made by a committee of top supervisors of departments whose work most directly affects customer service. In a typical, medium-sized gas company, such supervisors might be those having to do with appliance service, appliance sales, commercial and industrial utilization, distribution (including main construction and meter installation), rights-of-way, bookkeeping and customer relations.

Some companies already have such a standing committee responsible for coordinating activities of the various service departments and determining service policies. A committee in being has a great advantage over a newly created committee for its members are accustomed to meeting regularly and working together. The job, however, is big enough and important enough to warrant risking the early friction and provincial thinking which may appear in a group set up for this inquiry alone.

If possible, the chairman should have no special cause to advance except that of the best service which is consistent with the balanced interests of employees, customers and investors. At the committee's first meeting he must make sure that all members understand thoroughly the purposes and responsibilities of the group. It might be helpful for the chairman to obtain a "commission" from management. Such a document might read:

"I am confident that all of our people wish to give our customers the best possible service consistent with reasonable costs.

"For this reason a customer service committee has been formed and its members have been requested to develop information which will disclose areas in which we are falling short of our objectives.

"I assume that our department heads would welcome such information with respect to their operations.

"I would expect, in perhaps a majority of instances, where the information discloses we are falling short of our objectives, that a company policy or procedure is the basic reason. Management expects these policies or procedures to be brought to its attention even though it may have suggested or approved them."

(Signed) President.

A commission of this type makes it clear that the committee is expected to dig deep and range far, that there are no sacred cow policies, and that management recognizes the company is not perfect and wants to know what the imperfections are. This attitude should encourage creative suggestions and lessen the normal tendency to defend the status quo.

Furthermore, getting the supervisors involved to make an objective examination and later having the organization carry out effectively new ways of doing things is likely to be really successful only when everyone is keenly aware that management will not settle for less than good service to customers. Indeed, that awareness will do more to spur department heads and sub-department heads to work vigorously and effectively on preventive measures than any other device.

After the committee's assignment is understood, the next step is to have each committeeman list the trouble spots.

Problems once set down are easier solved. This is especially true of a command performance when it is known that someone with the power to act is ready, even eager, to know what the problems are.

Each committee member should be asked to list the company policies and the practices or performance of other departments which affect the kind of service his department is able to give. He should also list the practices, procedures or problems in his own department that result in service of lower quality than he would like it to be.

There will be no difficulty in getting a critical appraisal of an operating department or a credit department from a sales department and, of course, vice versa. The look each committee member takes at his own operations will produce some useful cross checks even though the beam may loom smaller than the mote.

If a conscientious job is done a consensus of the various lists will confirm to the committeemen the information developed by opinion surveys or the sampling method mentioned earlier, and point toward the troublesome areas which need further exploration. These areas are most likely to be: delay in physically getting service to customers, quality of service (e.g. gum or naphthalene problems—manufactured gas companies; combustion characteristics where high Btu oil gas supplements natural gas—mixed gas companies; main leaks —straight natural gas companies which formerly distributed manufactured gas), quality of appliance repairs or adjustments, delay or error in processing customers' accounts, a tough credit stance and the like.

Each of these areas should be assigned to a task force—a subcommittee of the customer service committee with authority to enlist such other help as it may need to carry through its inquiry. The task force should be asked to answer these questions concerning preventive measures in the area it is investigating:

1. What preventive measures are now being exercised?
2. What measures will be necessary to eliminate sources of undesirable situations?
3. What measures do you recommend?
4. What will be the price tag?

The many opportunities for preventive measures can be illustrated by following through, purely as an example, what the task force dealing with the installation of gas facilities is likely to find. First, there may be a number of procedures which involve extensive shuffling of papers between departments or sections within departments. The chances are that site visits are being made by two or more men handling segments of the same job; perhaps after a short training period one man on one visit can obtain all the information, orders or permissions that are needed. A step-by-step analysis of each procedure must be made asking of each step: can it be omitted, can it be combined, can it be simplified?

It is probable that the subcommittee's study will show that delays in the installation of gas facilities can be reduced by better coordination of the utility's activities with those of builders and developers, inspection authorities and other government agencies. It may be necessary to set up a group (or assign responsibility to an existing group) to work with builders from the time development plans are in the dream stage until mains and services are in the ground and meters have been installed. In any event it will almost certainly be necessary to require some group to follow up installation requests and expedite some of them—if unreasonable delays are to be avoided.

Degree of risk

The investigation may show that the need for reinforcement or approach mains can be foreseen and scheduled for off-peak seasons when this phase of construction work is less likely to interfere with the laying of mains within new developments.

There is a degree of risk in adopting such a policy for at best it will result in the installation of certain facilities some months in advance of actual need, and, at worst, in the possible non-use of these facilities for an indefinite time if the developers' plans fail to materialize or the number of units built is greatly reduced.

A measure of insurance against laying unproductive reinforcement or approach mains might be gained by timing such work to begin when a reasonable number of houses within the development have reached the foundation stage.

As a last example of the scope of an inquiry into the installation of facilities, it may be discovered that the internal approvals required before work can be undertaken make some fairly substantial delays inevitable. Depending on the company's by-laws, it may be possible to allow the operating department, without waiting for non-operating department approvals, to proceed with jobs estimated to cost say, less than $50,000 after developers with good credit have met tariff requirements.

If such a policy proves practical, it may well be desirable to have the papers which formerly required certain now by-passed approvals submitted at a later time as an accounting, budget and control medium and not as authority to proceed with the work.

This task force's inquiry looks to eliminating waste motion and lost time, not from an efficiency or cost control standpoint, but from a complaint prevention standpoint: waste motion and lost time mean delay and delay may well mean complaints. The new recommended procedures, policies and practices—streamlined, up-to-date and designed for ease of application—should be presented for final polishing by the entire customer service committee. Those requiring management approval should be cleared with the heads of the divisions involved before submitting them to management.

The example cited shows that one of the most fertile fields for customer dissatisfaction is delay in supplying new gas service. Preventive measures to reduce complaints in this area involve early knowledge of builders' plans, formalized follow-up of work progress, coordination of the utility's activities with those of the builders, inspection authorities and other government agencies, simplification of internal paper work flow and approval requirements, advance installation, if possible, of approach or reinforcement mains, and above and beyond all these, an organization alert to the fact that management will not accept less than good service. This last prerequisite is the force which will cause someone to recognize that a given job must be lifted out of routine if the utility is to meet the customer's need for service. It is the force which will impel some employee to do a bit more than his part of the job requires in order to keep things from going wrong. It is the stimulus which will bring forth suggestions from employees for further improvement in methods or procedures.

Each of the other troublesome areas

(Continued on page 30)

Combined Industrial Gas Exhibit to cover 270 feet

Dominating one side of the giant arena of the International Amphitheatre, Chicago, the Combined Industrial Gas Exhibit will feature the latest applications of gas heat to industrial processing during the week of Nov. 4.

Several thousand members of the American Society for Metals and visiting industrial gas engineers from all over the United States and Canada will see what is new in equipment and controls. With industrial gas exhibits facing on 270 feet of aisle space, A. G. A. will have the largest exhibit in this largest of all trade shows.

Nine manufacturers of industrial gas and allied equipment are cooperating with the Industrial and Commercial Gas Section this year. They are: American Gas Furnace Company, Elizabeth, N. J., Continental Industrial Engineers, Chicago, Eclipse Fuel Engineering Co., Rockford, Ill., Gas Appliance Service, Inc., Chicago, Charles A. Hones, Inc., Baldwin, N. Y., The C. M. Kemp Mfg. Co., Baltimore, Md., Metalwash Machinery Corp., Elizabeth, N. J., Selas Corporation of America, Dresher, Pa., and The Spencer Turbine Co., Hartford, Conn.

The traditional Industrial Gas Breakfast, always a highlight of Metal Show Week, will be held on Wednesday morning, Nov. 6, in the Congress Hotel. Industrial gas men and manufacturers of industrial gas equipment will have as their guests representatives of publications in the metalworking field. The speaker, Martin A. Elliott, director of the Institute of Gas Technology, Chicago, will have a pertinent message for all attending this 21st annual breakfast.

Several A. G. A. committees having to do with the industrial phases of the gas industry will meet during the week.

Lecture series on heat is ready for distribution

The lecture series on *Heat as Related to Commercial Cooking* is ready for distribution, K. I. Robinson, chairman of the Promotional Educational Committee, has announced.

The bound set of lecture series and slide films, costing $13.75 per set, is expected to fill a real need in the training of home service and commercial gas sales personnel.

In addition, there is the added advantage of making the lectures available to schools, colleges and institutions which offer vocational and management courses in hotel, restaurant, institutional, home economics and dietetic education.

There are seven avenues of exploitation, each one of which is valuable unto itself. They are:

1. In schools and colleges with hotel, restaurant and institutional education classes.
2. In colleges and universities offering courses in home economics, including classes in dietetics.
3. In gas company training classes of home service and commercial gas sales personnel.
4. In educational classes for restaurant managers and dietitians.
5. In vocational classes for volume cooking in secondary schools and correctional institutions.
6. In educational classes for dealer salesmen.
7. In educational classes for kitchen and administrative personnel of large institutions.

The non-technical discussions of heat and how it is transferred, applied and controlled, have been prepared to bring about a better understanding of the essential differences between one type of cooking appliance and another and how these appliances can be utilized to the best advantage in food preparation.

Lecture one is entitled *Heat and How It Is Transferred;* lecture two and three are called *Heat and How It Is Applied,* and the fourth is *Automatic Control of Heat and a Discussion of Non-Cooking.*

Lectures are of 30 to 40 minutes' duration, allowing time for subsequent classroom discussion. The series is bound in a substantial loose-leaf binder.

Document on industrial ovens and dryers is issued

A comprehensive document covering every phase of the installation and operation of industrial ovens and dryers has been issued by the Factory Mutual Engineering Division of the Associated Factory Mutual Fire Insurance Companies of Norwood, Massachusetts.

Known as Loss Prevention Bulletin No. 14.15, it is entitled *Industrial Ovens and Dryers, Safe Installation and Operation.* The bulletin supersedes No. 14.46, *Suggested Oven Inspection Forms* 1938; and No. 11.39 *Safety Ventilation* 1946.

The bulletin should be of value to the gas industry since this type equipment is in more widespread use than any other form of equipment used throughout the industry.

It is divided into seven parts including the suggested procedures for oven manufacturers' application for acceptance by Factory Mutual, the basic safety considerations for locations of industrial ovens and dryers; basic safety considerations for the construction of this type of equipment, sections on preventing fuel and vapor explosions, and the procedures to follow for safety tests on equipment and controls.

Many of the basic principles set forth as a proposed standard in A. G. A. Information Letter 70A, January 1957, *A. G. A. Recommended Good Practice Requirements for Installation of Gas Equipment on Industrial and Commercial Premises* are reflected in the bulletin.

The practices outlined are the result of many years' experience in the field of industrial heating safety and it has brought up-to-date the growing variety and complexity of industrial ovens and dryers to assure the highest practical degree of freedom from production-crippling fires and explosions.

Eliminate complaints

(Continued from page 28)

which the customer service committee will probably pinpoint should be examined by a subcommittee with the same intensity, as in this illustration of some of the factors involved where there are delays in physically getting service to customers. In the end there undoubtedly will be a series of recommendations on which management will have to pass and most of them will cost money.

If the recommendations are sound, however, a large part of the cost may be recouped. There should be and perhaps this is of greater importance, a substantial reduction in legitimate but nasty complaints.

There is no thought that this method —the identification of troublesome areas by a committee made up of department heads most intimately associated with customer service and an intensive investigation of these areas by subcommittees—is the perfect or only way of finding the preventive measures needed to reduce complaints.

Some things will continue to go wrong and some customers will be mishandled no matter what measures are taken.

Yet the number of instances of unacceptable performance can be sharply reduced especially if everyone in the organization knows that management not only wants things that go wrong straightened out promptly but also wants to foresee and prevent complaints.

Utility in comeback

(Continued from page 26)

the reasons why range manufacturers did not devote extensive efforts in an area where gas range sales of their particular brand were not extensive in the past. But only by sales effort can this situation be improved.

Another guidepost indicating that our success has been only partial is furnished in data from a local Sears Roebuck and Company store. Although Sears has a large volume business with customers from the rural hinterland where no gas service is available, discussions with the appliance department reveal that new sales of electric equipment are still made on our service lines. In the sale of ranges in 1955 and 1956, we find the following percentages of electric and gas in our service area:

	1955	*1956*
Electric	95 per cent	56 per cent
Gas	5 per cent	44 per cent

These figures indicate that the situation is improving. Given time we may hold our own with the most difficult competitive appliance—the range; but there still is a long distance to cover.

Once again this year we have reviewed the basic problem of utility merchandising as it relates to a dealer cooperative program. We have concluded as we have each year previously that it is essential for us to remain in the merchandising business. Some of our reasons for this conclusion are as follows:

1. The utility is the leading exponent in upgrading the quality of appliances, because it is not in a constant price contest, but is concerned instead with the sale of gas and the cultivation of future customer acceptance. Utility initiative in upgrading certainly pulls the dealer upward in the quality of gas appliances merchandised.

2. The utility is better able to conduct the over-all promotion job when it has a balanced sales organization, a part of which is directly on the firing line in daily contact with present and potential customers. It can effectively carry the whole message of gas promotion, while few dealers are interested in crusading for gas. Direct selling by utility sales people creates a desire for new gas appliances and makes prospects for dealers as well as the utility itself. I believe our own experience demonstrates the validity of this argument better than any words.

3. We believe that employees of a merchandising utility are more aware of the sales emphasis on gas appliances. An interest in gas alone as a product is remote and intangible; an interest in the equipment which makes the sale of gas possible is close and tangible.

4. In a merchandising utility, both top management and sales management are alert to advancements and changes by competitors in both product and merchandising methods and are in a position to react faster than when this information is gained second-hand if at all. In our opinion, a nonmerchandising utility may easily become lethargic and complacent about the need for aggressive promotion and an alertness to changes in customer reaction.

5. Dealers usually respect someone who can sell. For example, a dealer may not want to push a certain appliance, and may feel that it can not be sold. If we prove that it can be sold and a profit can be made, the dealer can be convinced. If we test our sales techniques through our own experience, we can do a better job of training the dealer and his salesmen. He recognizes that we are offering him fact, not theory.

In conclusion, we definitely feel that a merchandising program is not a substitute for a dealer relations program. Instead, we feel that the two go hand and hand.

Our primary objective is the encouraging of dealer sales. We lend the dealer every ounce of support available in the interest of achieving maximum sales of gas and gas appliances. We believe that the best way to achieve this objective is to conduct the most aggressive possible dealer relations program, while maintaining in our own organization the sales-minded spirit that can result only from conducting our own merchandising program.

Expert advice

Susan Lightbown, attractive winner of the 1957 "Miss Connecticut" title, is shown getting a few hints on gas cooking from Dorothy O'Meara (l.), home economist of the Bridgeport Gas Company

GROVE LAWRENCE, *CHAIRMAN* • VICTOR F. BITTNER, HERBERT C. JONES, *VICE-CHAIRMEN*

Since critical flow provers used frequently, deviation from gas law important

Effect of supercompressibility

By JIM PRUET

Superintendent of Gas Measurement
Trunkline Gas Company
Houston, Texas

Since critical flow provers are now in frequent use with gas at quite high pressure—for well testing etc., as well as for the calibration of high pressure meters, the effect of supercompressibility or deviation from the "perfect" gas laws becomes important. The question merits some special consideration because the effect of this variable on the prover might be confused with the volume correction which one might want to make on the meter index readings.

The method of applying the volume correction to the quantity displaced by the meter, is quite straight-forward and obvious, being directly proportional to the deviation, $1 + N$. However, the effect of the deviation on the performance of the critical flow prover is somewhat more complicated, with consequent possibility of error through misapplication of the corrections. There is general agreement as to the effect of supercompressibility, under conditions of critical flow, as indicated by published literature on the subject.

Although the following description of the effect of deviation on critical flow prover orifices is generally held and is indicated in various technical publications, some field corroboration of anticipated performance was felt to be desirable. Early this year tests were conducted on Trunkline Gas Company's system in the vicinity of McAllen, Texas (with the writer and a representative of the American Meter Company in attendance). These tests employed a special high pressure critical flow prover comparing its performance with a flow measurement from a conventional orifice meter.

The tests were conducted at pressures ranging from 560 to 1000 psig with gas of known properties. The results of these tests checked flow measurements obtained from the conventional orifice meter, within the limit of accuracy indicated as available with the published A.G.A. coefficients, coupled with a presumed accuracy of ± 0.25 per cent for the critical flow prover. Tests were run under stable field conditions with a conventional mercury-type orifice meter, whose accuracy had been confirmed; pressure readings were obtained with a dead weight tester; temperature readings were obtained with conventional field instruments.

Results in agreement

The calculation of data from these tests was analysed on the following basis; the close agreement of the results constituting a substantiation of this generally held theory.

When gas flows through a restriction, the velocity of the flowing fluid is a function of the *actual* density at flowing conditions. This is true for an orifice where critical flow prevails as well as for a conventional measuring orifice employing relatively low differential pressures. Most gases deviate, somewhat, from the pattern which the "perfect" gas laws indicate. Generally, with hydrogen as a notable exception, gases are denser at high pressure than a simple computation would indicate.

In the measurement of gas with a conventional orifice meter, the general gas flow equation shows the effect of this deviation from "perfect" gas laws as a single factor as $(\sqrt{1+N})$ in the numerator (upstairs) in the equation.

$$Q_h = F_b \frac{\times 1 \times}{\sqrt{G}} \ldots . \times F_{pv} \sqrt{h_w P_f}$$

Where:

Q_h = cu. ft. per hr. at base pressure
F_b = basic orifice flow constant
G = specific gravity
$\sqrt{1+N} = F_{pv}$ = supercompressibility factor
. . . . = other customary applicable factors

Actually, the effect of the deviation is dual in nature being made up of two simultaneous effects.

First, the velocity is reduced inversely proportional to the square root of deviation—this enters $(\sqrt{1+N})$ in the denominator (downstairs) in the equation.

Second, the conversion of flowing volume to volume at a base pressure is a direct function of the deviation which enters $(1 + N)$ in the numerator (upstairs) in the equation.

$$Q_h = F_b \frac{\times 1 \times}{\sqrt{G}} \ldots . \frac{\times 1 \times}{\sqrt{1+N}} \; (1+N) \sqrt{h_w P_f}$$

TABLE OF TEST DATA AND CALCULATED RESULTS

Test No.	4" Tube Orifice Size	Orifice Constant 14.73 psia	L—10 Chart 50"—2000# Diff.	Static	Flowing Temp.	F_{pv} Factor	Hourly Rate CFH	Test Time, Minutes
1	1.750"	2616.8	6.22	5.36	75°	1.0386	89335	20
2	1.250"	1307.9	7.46	7.15	77°	1.0674	73271	8
3	2.000"	3473.0	8.32	5.46	56°	1.0459	165655	6

Test No.	C F Orif. Dia.	t_s, on Disc	Test Press. psia	Gas Temp.	Calculated Hourly Rate (t_s etc.)	Hourly Rate Metered	Per Cent Difference
1	3/8"	2.059	575.2	75°	88742	89335	—0.67
2	1/4"	4.590	1022.7	77°	72606	73271	—0.92
3	1/2"	1.175	598.7	56°	165884	165655	+0.14

The combined effect of the deviation being:

$$\frac{1}{\sqrt{1+N}} \times (1+N) = \sqrt{1+N}$$

When the critical flow orifice is used as a proving device for displacement meters, only the volume at flowing conditions is desired—since the displacement meter measures in that manner and a comparison on that basis represents the meter proof. For this reason only the first of the two effects described previously must be considered—the effect on the velocity of the flowing fluid. This can be represented as follows where:

$$Q_f = \frac{3600}{t_s \times \sqrt{G} \times \sqrt{1+N} \times \ldots.}$$

Q_f = cu. ft. per hr. at *flowing* conditions

t_s = calibration time, in seconds per cu. ft., at conditions assumed as standard

$\sqrt{G}$ = specific gravity factor

$\sqrt{1+N} = F_{pv}$ = deviation factor

. . . . = other customary applicable factors

From this it can be seen that the correction for deviation corresponds to $\sqrt{1+N}$, or F_{pv}, used as a multiplier of the "standard time" stamped on the critical flow orifice t_s; — the same as the various other correction factors commonly applied in such proving operations.

In applying the correction for deviation from the "perfect" gas laws, as described above, the meter calibration would be kept purely on a volumetric basis—the same basis as would be obtained by a calibration with a bell prover. It would still be necessary to apply deviation corrections $(1+N)$ to the meter index readings, based upon the conditions prevailing during measurement—assuming that the measurement contract specifies correction for such deviation.

A practice has arisen in certain areas, of combining the deviation correction to the flow prover with the deviation factor which is subsequently applied to the meter index readings. This can be done, without error, if the meter is both proved and operated at substantially the same pressure. It amounts to using the deviation factor, $\sqrt{1+N}$ or F_{pv}, as a *divisor* instead of a multiplier of the time stamped on the orifice plate.

With a meter proved in this manner no deviation correction factors should be applied to the meter index readings—for all practical purposes, the effect of deviation has been "proved into the meter." That meter, however, would only be accurate at the pressure corresponding to its calibration. Such a practice would not, generally, be considered proper; since the inclusion of correcting factors in the proof of displacement meters has not been an accepted practice.

Some companies circumvent, for all practical purposes, the need for applying $\sqrt{1+N}$, or F_{pv} as a multiplier of the standard time on critical flow orifice, by conducting proof tests at relatively low pressures—say about 20 psig, where F_{pv} would be very close to unity; close enough so that its effect could be considered negligible. The actual manner of deviation as it affects the critical flow prover would be a matter of company policy.

Various methods, and short-cuts, might be employed without any sacrifice of accuracy. It is recommended, however, that any combination method be carefully scrutinized to make sure that an incorrect consideration of the effect of deviation from the "perfect" gas laws has not been introduced—with consequent error in the results.

A.G.A. renews contract to participate in 'Mrs. America' contest

THE American Gas Association has contracted to participate for the fifth consecutive year in the national "Mrs. America" homemaking promotion. This was announced jointly by S. F. Wikstrom, A. G. A. director of promotion and advertising, and Bert Nevins, president of Mrs. America, Inc.

Utility members of A. G. A. once again will conduct city, county, and state contests in each of the 48 states and the District of Columbia. Competitions in cooking, sewing, ironing, table setting, and other domestic arts will be staged in cooperation with some of the nation's outstanding manufacturers to select the best homemaker from each state and the District of Columbia to compete in the grand finals to be held in May 1958 for the coveted "Mrs. America" title.

H. Hansell Hillyer, president of the South Atlantic Gas Company, Savannah, Georgia, has been elected chairman of the "Mrs. America" Committee for the gas industry. Another committee, comprising manufacturers which are not in the gas business, soon will be formed to coordinate all activities on the local as well as national level with Mrs. America, Inc., and the American Gas Association.

This year gas utilities serving some 18 million meters participated in the "Mrs. America" campaign. Increasing numbers of gas companies have been participating each year, and the expectation is to hit 20 million meters in 1958.

Once, a 20-gallon heater was enough; now many dealers are pushing 40-gallon size

Washer determines size of heater

By JOHN J. McKEARIN

General Sales Manager
Laclede Gas Company
St. Louis, Missouri

It's old-fashioned to refer to hot water as "precious." Demands for hot water in the home have made it a commonplace, vital necessity to modern living, and when a woman calls for service because her water heater isn't functioning, she wants it fast. "Don't you know," she says, "That I just can't get along without hot water?"

We know it. We know there were 3,595,500 automatic water heaters sold nationally in 1956—2,762,100 gas and 833,400 electric. There are more hot water fixtures in today's new homes than ever before and the advent of one new home appliance—the automatic clothes washer—has made obsolete the past methods of determining the type of hot water service a home should have. At one time a 20-gallon automatic water heater was recommended for average homes, but as customs changed, this recommendation was increased to 30 gallons. Even now, many sellers of automatic water heaters recommend the 40-gallon size to customers who want to be certain they will not run out of hot water. The automatic clothes washer has set new standards for automatic water heaters but it has become a simple measuring stick for automatic hot water service. If an automatic water heater has the delivery capacity to supply hot water for the continuous operation of an automatic washer, it can take care of all the regular requirements of a one and one-and-a-half bathroom home and that accounts for 90 per cent of all homes.

There are two exceptions—a home with some highly unusual demand and a home with a washer that has a very low hot water use per hour. The unusual demand necessitates selecting a heater for the highest peak water heater load and the low consumption

"When the modern woman calls for water service, she wants it fast," says John J. McKearin of Laclede

washer should not cause a recommendation of any heater smaller than one which can supply 30 gallons of hot water an hour. This is to insure an adequate supply for kitchen, bathroom, and other general hot water fixtures.

But why select or recommend an automatic water heater on the basis of an automatic clothes washer? All homes do not own an automatic washer. That is true. Ten years ago there were approximately 500,000 automatic washers in use. Today there are over 17,000,000. In 1956 over 3,400,000 were sold and the estimate for 1957 is 3,600,000.

An automatic water heater is an investment which should last for a number of years. Better-grade automatic water heaters carry tank warranties of ten years. Therefore, the purchaser of an automatic water heater, whether she has an automatic washer or not, is entitled to the assurance that if and when she buys one, she does not jeopardize her good hot water service. In other words, she does not want to automatically ruin her automatic supply of hot water by the purchase of an automatic washer because this might automatically upset her pleasant and casual way of living.

The automatic washer provides us, therefore, with a measure by which we can gauge the correct automatic water heaters for the average home. You can call this measure a "performance rating," a "laundry rating" or a "recovery rating." It simply means the number of gallons an automatic water heater will heat per hour through a temperature rise of 100°.

The American Gas Association and certain water heater manufacturers have established standards and methods for these ratings and the selection of automatic water heaters but, before commenting on these, I would like to discuss this 100° rise which we consider necessary in the modern home laundry.

From Mrs. Helen Tangen of the Hamilton Manufacturing Company and Miss Adelaide Fellows of the Philco-Bendix Corporation, I have received some excellent information re-

These remarks are condensed from a talk made by Mr. McKearin at the fourth annual meeting of the American Home Economics Association in St. Louis June 25-28.

garding temperature, washability, wrinkles, soil, grease, and all types of fabrics. The importance of hot water was clearly shown. The very latest information I have, however, is from a thesis by Mrs. Maurine Miller Welch who made a graduate study for her master's degree at Ohio State University. The thesis is entitled *Effects of Water Temperature on Certain Factors Relative to Laundering.*

The Welch tests were made under the supervision of Dr. Elaine Knowles Weaver of Ohio State University. The thesis deals with the comparative laundering results from 165°, 125°, and cold water. It deals, to a large extent, with the new synthetic fabrics and combinations of cotton and synthetics which are common to laundry problems today.

The study used liquid detergents which are rather new in home laundry use. The tests were made with garments worn by men and women in various occupations and the results were from 15 wearings and washings. Here are the conclusions:

"Of the three selected temperatures of wash water, the hot was more effective in removal of soil from more worn garments than warm or cold water. With standard soil test materials, hot water was more effective in soil removal from acetate, viscose and cotton fabrics. Warm water gave slightly better results in the removal of soil from nylon fabric. Redisposition of soil from any temperature of wash water was insignificant.

"When clothes were only slightly soiled, any water temperature seemed to produce satisfactory results. When clothes are extremely soiled, hot water and detergent alone did not do the entire job. An additional oxidizing or reducing (stain removal) agent seemed to be needed.

"The fabric brightening ingredients in the detergent tended to build up in fabrics. To the human eye they gave an increasing whitening effect under ultra violet light or in direct sunlight, but there was a dingy, grayish appearance to the fabrics under incandescent light.

"Among the three selected temperatures of wash water there was relatively little difference in the destroying or flushing away of bacteria. Some types of organisms are killed completely in water temperatures above 120°F., but less than ½ of 1 per cent of any organism survived in the cold water washing. Bacteria used in this study were not considered a serious problem in the laundering process as they were in the automatic washer.

"The relative effects of the three temperatures of water on the finish of men's dacron and cotton shirts followed the pattern established by previous research. Hot water washing created wrinkles that necessitated ironing: cold water washing preserved the finish that gave a good appearance without ironing, as far as wrinkles were concerned. The general appearance, however, was not satisfactory for any of the shirts washed at any temperature after the tenth washing."

Now, 165° water was considered hot water in the tests as I understand it. Many home economists and laundry experts would consider hot water 140° to 160°, but there is a loss of approximately 10° between the tank and the automatic washer. This loss will vary somewhat with relation to the length of the hot water run, size of pipes and temperature of surrounding area. Therefore, an automatic water heater to adequately take care of the home laundry needs should be ample to supply hot water at a minimum temperature of 160° as it leaves the tank.

Opinions may change

As more research is conducted on clothes washing, we no doubt will change some of our opinions on the importance of various temperatures of hot water but I believe we can all agree at the present time that a plentiful supply of hot water—140° to 160°—is the most important factor in today's home for satisfactory home laundering in an automatic washer. Major wash loads are composed of sheets, pillow cases, white and colorfast linens, undershirts, shorts and children's clothes. These all require hot water. Heavily soiled garments such as work clothes, gardening clothes, grease-stained clothes, all require hot water for soil removal.

The automatic washer calls for *A Larger Glass and Fill It Fast* but how fast is fast? From our standpoint, fast means that the water is heated fast enough to meet the peak demands in the home. It is not sufficient to heat in 24 hours the amount of hot water the particular home will use in 24 hours; we must heat it in a way that will satisfy the large volume that is needed over a short or peak period of time.

If you told the average housewife that in selecting an automatic water heater she should consider the size of the tank, the hourly Btu input, the efficiency of the water heater, the gallons of hot water per hour her automatic washer uses, and the maximum temperature setting of the thermostat on her automatic water heater, she probably would say like many people do when their job becomes extremely difficult, "There must be an easier way of making a living."

In this case there is. There have been established minimum specifications for top-standard automatic gas water heaters and the Ruud Manufacturing Company has developed "Laundry-Rated" automatic water heaters. This rating of automatic water heaters to correspond to the laundry rating requirement of the automatic washer makes the selection of an automatic water heater simple.

Gas utilities and water heater manufacturers publish lists showing the laundry rating requirements of various automatic washers. I was looking at such a chart in a booklet published by the Lone Star Gas Company. This chart showed the names of 34 makes of automatic washers and 299 different models. Bendix alone showed 28 different models. The number shown on this chart opposite the model of the washer is the laundry rating requirement, the number of gallons of hot water the washer requires per hour for continuous operation, load after load, with an allowance of five minutes between cycles for unloading and reloading.

All the customer need do is select a modern automatic gas water heater with a similar laundry rating number. She will then have a modern hot water service to meet all her needs in the laundry and for normal usage around the house. For example, a #332 Hamilton automatic washer has a laundry rating of 38. By looking at a chart of an automatic water heater manufacturer, we find that Model #A36-40 has a laundry rating number of 40. The customer is assured that this #A36-40 water heater will furnish hot water for her automatic washer in the right quantity and at the right temperature whenever necessary and also supply other household demands.

If a laundry rating is not available

for a certain heater, these specifications should be checked.

1. The heater should have a 30-gallon storage capacity. Personally, I believe it should have a 40-gallon storage capacity, but at least it should have a storage rating equivalent to the single load requirements of an automatic washer. The majority of automatic washers have a per load demand of 30 gallons or less.

2. The heater should have a 160° top thermostat setting as a minimum. This is in order to insure 140° to 160° water in the washer.

3. The heater should have a 35,000 minimum Btu hourly input. This is in order to heat water at a rate equal or greater than the hot water consumption of the automatic washer.

These minimum requirements are a "must" if the automatic water heater is to suppy a modern home with modern hot water service. Can you imagine this situation. A family buys a home for $20,000 . . . beautiful kitchen, built-in gas range, 1½ baths, connections provided for both automatic washer and dryer, and a 25-year mortgage. Now let us look at the water heater: 30-gallon tank; 24,000 Btu per hour input; 140° thermostat; one year guarantee.

Isn't that ridiculous? Home economists, water heater manufacturers and utilities have to bring the true story of automatic hot water very forcefully to the attention of the home owner.

I was talking to a man who sells a considerable number of these not-up-to-the-minimum-standard water heaters. He wasn't very impressed and he said, "You certainly want to upgrade automatic water heaters and see that the American housewife buys only a high-grade automatic water heater, tailored to her complete hot water needs and built to give that type of satisfactory service for at least 10 years." You know how I answered him?

"That is just exactly what I want!"

Facts and figures

(Continued from page 22)

pipeline industry to ultimate consumers during July 1957 amounted to 4,868 million therms, an increase of 8.6 per cent over July of last year. Sales of gas to industrial users totaled 3,715 million therms, an increase of 13.9 per cent over industrial sales of 3,262 million therms in the same month of last year. Industrial production, as measured by the Federal Reserve Board index was 144 (1947-1949 = 100), up 5.9 per cent over July, 1956. The Association's July index of gas utility and pipeline sales is 228.6 (1947-1949 = 100), up 8.6 per cent over July 1956.

The Labor Department reported that private home building spurted in August and showed signs of continuing the rise in coming months. The seasonally adjusted annual rate for private housing starts reached 1,010,000 units. This is the best level of the year, but still behind the 1,136,000 pace in August 1956. Actual starts both private and public during August were 95,000 units down from the 103,900 homes begun in August 1956.

Although housing starts have picked up a bit, gas appliance shipments have as yet not reflected this change. It usually requires several months from the start of construction to the completion stage which includes the installation of appliances.

The appliance data shown in the tables relate to manufacturers' shipments by the entire industry compiled by the Gas Appliance Manufacturers Association. Industry-wide electric appliance statistics are based on data compiled by the National Electrical Manufacturers Association and are reprinted by GAMA in its releases. Data relating to oil-fired burner installations are compiled by *Fuel Oil and Oil Heat*. Data on both gas and electric dryer shipments are released regularly by the American Home Laundry Manufacturers Association.

GAS SALES TO ULTIMATE CONSUMERS BY UTILITIES AND PIPELINES DURING JULY

(MILLIONS OF THERMS)

	1957	1956	Per Cent Change
Month of July			
All types of Gas	4,868.4	4,484.1	+ 8.6
Natural Gas	4,766.9	4,374.7	+ 9.0
Other Gases	101.5	109.4	− 7.2
Twelve Months Ending July 31			
All types of Gas	74,347.9	71,399.2	+ 4.1
Natural Gas	72,072.5	67,889.7	+ 6.2
Other Gases	2,275.4	3,509.5	−35.2
July Index of Monthly Utility			
Gas Sales (1947-49 = 100)	228.6	210.6	+ 8.6

PERTINENT BUSINESS INDICATORS, JULY

(WITH PER CENT CHANGES FROM CORRESPONDING PERIOD OF THE PRIOR YEAR)

	July			June		
	1957	1956	Per Cent Change	1957	1956	Per Cent Change
Industrial activity (1947-49 = 100)	144	136	+5.9	144	141	+2.1
Consumer prices (1947-49 = 100)	120.8	117.0	+3.2	120.2	116.2	+3.4
Housing starts, Non-farm (thousands)	96.0	101.1	−5.0	97.0	107.4	−9.7
New private construction expenditures ($ million)	3,047	3,107	−1.9	3,004	3,030	−0.9
Construction costs (1947-49 = 100)	163.1	153.7	+6.1	159.9	153.4	+4.2

n.a. not available.

Utilization reports available in limited supply

ALTHOUGH thousands of copies of two important utilization reports have already been sold by the American Gas Association, the Utilization Bureau announces that a limited supply of these reports is still available. One of them, *Investigation of the Performance of Automatic Storage-Type Gas and Electric Domestic Water Heaters* (Bulletin 436-1956), written by Eugene F. Hebrank of the University of Illinois, is available from A. G. A. at 60 cents a copy. The other, sponsored by the Committee on Comparison of Competitive Services, is entitled *Comparative Total Costs of Gas and Electricity for Cooking and Water Heating in Residences* (1955), and costs 40 cents a copy.

Industry news

Poster campaign features Julia Meade

AMERICAN GAS ASSOCIATION member companies will use nearly 3,000 billboards in 200 utility areas in the U. S. during 1958 in seasonal sales promotion campaigns featuring Julia Meade, the industry's television hostess on "Playhouse 90."

Miss Meade tells the benefits of gas service and gas appliances to an average weekly television audience of 13 million families. In 1958, millions will see her on colorful billboards across the nation promoting gas ranges, gas clothes dryers, and water heaters.

In addition to the four separate outdoor poster designs, local utility companies will also feature Miss Meade on bus cards, truck cards, point of purchase displays for dealers and utility stores.

The A. G. A. 1958 poster program will also include three other themes: househeating, gas incinerators, and a Christmas campaign for all gas appliances.

The posters, with utility company imprint, will be produced by the Cramer-Krasselt Co., Milwaukee.

Association offers science film strip for school showings

a PAR activity

A NEW film strip entitled "Scientists at Work in the Gas Industry" is now available to utilities from the American Gas Association, primarily for distribution to junior and senior high schools. This film strip is also useful for showing to gas industry employees, special school groups, colleges, YMCA groups, and others.

The 48-frame, black and white 35 mm. slide film was prepared in consultation with Burnett Cross, educational consultant, and representatives of the National Science Teachers Association and the Scientific Manpower Commission. The film illustrates the variety and scope afforded scientists, technicians, and others who wish to pursue careers in the gas industry.

The film strip kit includes the slide film, a 12-page teacher's guide, a mailing tube, and a form letter of transmittal saying that the kit is being sent to the teacher with "the compliments of your gas company." The cost is $1.25 per kit.

Copies of the film strip only cost $1 each, and the teacher's guide only cost 25 cents each. Orders may be placed with the Educational Service Bureau of the American Gas Association.

A.G.A. wins Safety Council award for third time in five years

THE American Gas Association, whose member companies helped the industry improve its safety record in 1956 for the ninth straight year, has been honored by the National Safety Council for the third time in five years.

The council's Association Safety Award will be presented to A. G. A. on Oct. 23 at the National Safety Congress in Chicago.

Credit for the achievement, A. G. A. said upon notification of the award, is due primarily to the leadership and support of company managements, as reflected in the A. G. A. Executive Safety Committee headed by A. W. Conover, president of the Equitable Gas Company, Pittsburgh.

Increased emphasis on comprehensive safety programs has resulted in a 39.7 per cent reduction in member companies' injury rates in the past five years and a 14.7 per cent improvement in the past year alone.

A. G. A. also called attention to the efforts of its Accident Prevention Committee headed by E. C. Baumann, safety engineer, Public Service Electric and Gas Company, Newark, New Jersey.

This committee, which carries on a continuing study of accident causes and corrective measures, is responsible for the Association's wide range of safety activities featuring employee education programs, training courses for supervisors, and publication of safe practice manuals.

The gas industry achieved an all-time low of 8.68 disabling injuries per million manhours last year, contrasted with a figure of 21.86 in 1947.

SGA holds home service round-table

Home service supervisors from 10 companies participated in the recent Southern Gas Association home service round-table. Laverna Best (standing), home service director, Houston Natural, conducted the discussion of dealer programs, home calls, range promotions, demonstrations, and training. The meeting was held at Houston's Shamrock-Hilton and Houston Natural's hospitality house

Manual reprinted

INCREASED DEMAND for its safety manual on the installation and servicing of gas appliances has prompted the American Gas Association to prepare a supplemental printing of the illustrated booklet which was first made available several months ago.

Approximately 25,000 of the booklets, compiled by the Distribution and Utilization Subcommittee of the A.G.A. Accident Prevention Committee, are already being used by the customer service departments of more than 200 utility companies in the U. S. and Canada.

Substantial requests have been received recently from plumbing and heating contractors and appliance dealers across the country.

The manual, entitled *Suggested Safe Practices When Installing and Servicing Gas Appliances,* gives detailed instructions for 11 types of gas appliances: conversion burners, furnaces and boilers, floor furnaces, radiant fires, ranges, refrigerators, clothes dryers and incinerators.

Copies of the booklet may be obtained from the A.G.A. Order Department, at 40 cents each in quantities up to 99; 35 cents each in quantities of 100 to 499; 33 cents each in quantities of 500 to 999; and 30 cents each in quantities of 1,000 or more.

PCGA holds annual meeting, elects Gueffroy, Blackburn

C. H. GUEFFROY, president of the Portland Gas and Coke Company, was elected president of the Pacific Coast Gas Association at the group's 64th annual convention. R. R. Blackburn, senior vice-president of Southern California Gas Company, was elected vice-president, and Harry McGann, auditor of division accounts, Pacific Gas & Electric Company, was elected treasurer. The convention was held Sept. 3-5 at the Fairmont Hotel in San Francisco.

The outgoing PCGA president, Thomas T. Arden, president of Robertshaw-Fulton Controls Company, delivered the opening remarks on the morning of Sept. 3. Also on the program that morning was Julius Klein, president of the Gas Appliance Manufacturers Association, and president, Caloric Appliance Corporation. Speaking from the manufacturer's viewpoint, Mr. Klein stressed the importance of aiming at the modernization and replacement markets in view of the fact that the next three years may constitute a levelling off of new home construction. Mr. Klein lauded the many national programs sponsored by the gas industry, emphasizing that "The full impact of these national programs must be thoroughly extracted at the national level."

A "perspective on our industry" was given by four speakers in the afternoon. Speaking for utilities were Robert A. Hornby, president of Pacific Lighting Corporation, Norman R. Sutherland, president of Pacific Gas and Electric Company, and Mr. Gueffroy. Mr. Arden spoke for the manufacturers.

F. M. Foster, vice-president of Southern California Gas, started off the Sept. 4 program with a talk entitled "You Can Do It Better." He summed up the current residential appliance situation, pointing out that the dealer must be induced to "sell up" on the basis of quality—not price. The manufacturer, he said, then has the added responsibility of producing a full line of quality appliances with proper "step up" models based on added features; and the related responsibilities—high standards and quality control, and making certain that purchasers can secure good service and prompt parts replacement.

Following a sales promotion symposium, the A. G. A. "Promotional Story" was told by Clare H. Zachry, president of A. G. A., and president, Southern Union Gas Company. Mr. Zachry described the A. G. A. PAR Plan, and stated that "Selling our goods and services can be best accomplished by double-barrelled action—a pooling of dollars and manpower on a *national* scale plus hard-hitting activity on the *local* level. There are many things which can be achieved by national coordination which cannot be achieved successfully by any one company," he said, adding that "The reverse is also true." Mr. Zachry cited the Bing Crosby promotion as the greatest promotion campaign that A. G. A. has ever undertaken. He told of the accomplishments of "Playhouse 90," and introduced Julia Meade to the delegates.

During Pacific Coast Gas Association convention, Charles Gueffroy (l.), incoming president, and Thomas Arden, outgoing president, joined Julia Meade in "Playhouse 49" skit

Demand for gas appliances increasing, says 'American Builder'

ALL-GAS HOMES are going over big, says the September issue of *American Builder*. The magazine—which has devoted much of this issue to the use of gas, features a color cover picture of a split-level home complete with all-gas equipment. Contending the gas equipment helps sell the house, *American Builder* says, "The opportunity to cash in on national gas appliance merchandising is now greater than ever since availability of natural gas is growing at a rapid rate. Only Vermont and Maine are excluded and plans are already under way to tie them in."

One of the many model homes cited in the building business publication is Mrs. America's Blue Flame Home in Portland, Oregon. In a two-week period, an estimated 35,000 to 40,000 people turned out to see the advantages of living with gas. The house was run on fuel with two gas water heaters, an all-gas kitchen, laundry and gas wall heating.

An example of an all-gas community—Blue Flame Village—is also cited by *American Builder*. The cooperative effort of The Ohio Fuel Gas Company, a realtor, and five builders, proved a potent force in promoting the idea in Columbus, Ohio.

Previously there had been all-gas "houses of enchantment" in Columbus but never a whole development. This new approach caught public attention and crowds jammed the opening of each new house, all differently designed.

A.G.A. announces new publications issued in September

The following new publications are available from A. G. A. Headquarters.

ACCOUNTING

• **1957 Proceedings of the National Conference of Electric and Gas Utility Accountants.** Co-sponsored by A. G. A. and Edison Electric Institute, and available from both. Cost is $5 for members, $7.50 for non-members.

HOME SERVICE

• **Home Service Home Calls.** Sponsored by the Home Service Committee; 25 cents a copy.

• **PAR Briefs.** Sponsored by the PAR Committee; free.

• **Go Twice as Far with PAR.** Sponsored by the PAR Committee; free.

PUBLIC INFORMATION

• **Build Your Future in the Gas Industry.** Sponsored by the Public Relations and Personnel Committees and available at 25 cents a copy.

• **Intercom,** New Orleans PR Workshop Edition. Free of charge.

• **Public Ownership Trends,** No. 11. Free of charge.

RESEARCH

• **Gasification of Pulverized Coal in Suspension.** Sponsored by Gas Production Research Committee. Available at $5 a copy from A. G. A. and the Institute of Gas Technology.

SAFETY

• **How Injuries to Gas Men Might Be Avoided.** Cost is 10 cents a copy for non-members. For members, single copies are free, 2-50 copies are 10 cents each, 51-99 are 7 cents each, and 100-500 are 5 cents each.

• **Safety Siftings.** Free of charge.

• **Gas Line Gus Posters, Third Series, 1958.** Each set of 12 costs $1.25.

• **Suggested Safe Practices for Distribution Men.** Cost is as follows: 40 cents a copy for 1-99 copies, 35 cents a copy for 100-499, 33 cents a copy for 500-999, and 30 cents a copy for 1,000 or more.

• **Safety Flipchart Kit.** The cost is $90 for each kit containing 9 flipcharts.

• **Wrench Safety.** This 35 mm. sound-slide film costs $10.

• **Seven Doorways to Death.** This 35 mm. sound-slide color film costs $30.

STATISTICS

• **Gas Requirements and Supplies of the Gas Utility and Pipeline Industry, Annual 1956-1960, Peak Day 1956-57 to 1960-61.** Cost is $2 a copy.

• **1957 Gas Data Book.** The first copy costs 50 cents, and each additional copy costs 25 cents.

• **Monthly Bulletin of Utility Gas Sales, July 1957.** Free of charge.

• **Quarterly Bulletin of Gas Industry Operations, Second Quarter 1957.** Free of charge.

Highlights of cases before the Federal Power Commission

Bureau of Statistics, American Gas Association

Certificate cases

● **Atlantic Seaboard Corporation** received temporary authorization from the FPC to replace three 2,200 horsepower steam units at the Boldman compressor station in Floyd County, Kentucky, with two 2,000 horsepower gas engine driven compressor units. Atlantic Seaboard said that because of increasing coal and labor costs and because of decreased power requirements at Boldman, it was no longer economically feasible to continue the operation of the steam facilities. Cost of new facilities is estimated at $1.6 million.

● **Cities Service Gas Company** was granted temporary authorization to develop the Elk City Storage Field in Montgomery County, Kansas. The estimated cost of the project is about $2.7 million. It will enable Cities Service to supply an additional 50 million cubic feet on the 1958-59 peak day and 100 million cubic feet on the 1959-60 peak day.

● **Home Gas Company** received a temporary authorization to install and operate storage field lines and appurtenant facilities necessary to the activation and operation of an extension of its Dundee Storage Field located in Schuyler, Steuben, and Yates Counties, New York. The authorization also called for the construction of approximately 20 miles of 16-inch transmission line. Estimated cost of construction is $3.8 million. This project will enable Home Gas to raise its estimated peak day deliverability from the Dundee field from 32.8 million cubic feet to 39.8 million cubic feet in 1958 and to 51.2 million cubic feet by 1962.

● **Michigan Gas Storage Company** was granted authority to add 3,800 horsepower to its Muskegon River compressor station, increasing that station's capacity to 25,200 horsepower. Included in the authorization was the improvement of the Winterfield and Cranberry Lake Storage Fields by drilling new wells and constructing about 6 miles of gathering pipeline. The cost of the project is $2.5 million and will enable the company to obtain up to 407.5 million cubic feet from the storage field on the 1957-58 peak day.

● **New York State Natural Gas Corporation** was granted a temporary certificate to build a 3,000 horsepower compressor station on its system near Utica, New York, and 9 miles of 12-inch branch line extending from an existing line to Oneida, New York, for deliveries to Niagara Mohawk Power Corporation. Niagara Mohawk will distribute the gas in the Syracuse-Oneida-Rome-Utica area. Cost of the project is $1.2 million.

● **Ohio Fuel Gas Company** has applied to the FPC for authority to build about 33 miles of pipeline in Ohio to help meet increasing natural gas market requirements and to improve operations and service during the 1957-58 winter. Total cost of the project is $1.2 million.

● **Texas Eastern Transmission Corporation** and its affiliate Texas Eastern Penn-Jersey Transmission Corporation filed an application with the FPC requesting authorization for Texas Eastern to construct 267 miles of pipeline and 2,200 horsepower in compressor capacity to increase its system capacity by 100 million cubic feet per day. The affiliate, Texas Eastern Penn-Jersey, proposes to construct 65½ miles of loop pipeline and 4,000 horsepower in compressor capacity to increase its system capacity by about 60 million cubic feet of gas per day. These facilities would be leased to Texas Eastern for operation by it. Total cost of both projects is estimated at $50.3 million.

● **United Gas Pipeline Company** was authorized by the FPC to build about 19 miles of pipeline to provide direct interruptible natural gas service to two industrial customers in Mississippi. Cost of construction is $920,000.

Rate cases

● **Nevada Natural Gas Pipe Line Company** has applied to the FPC for a proposed $172,600 or 18.8 per cent annual natural gas rate increase which would affect three wholesale customers in Nevada. Nevada Natural based the proposed higher rate principally on the various increases sustained in the cost of gas purchased from El Paso Natural Gas Company. The company is also claiming a 6.9 per cent rate of return.

● **Pacific Northwest Pipeline Company** filed a proposed $5.5 million or 17 per cent annual wholesale natural gas rate increase with the FPC. The increase would affect 26 wholesale customers in Colorado, Idaho, Oregon, Utah, Washington and Wyoming. The company stated that several months of operational experience has shown the need for the higher rates. The company seeks a 6½ per cent rate of return.

● **Southern Natural Gas Company** filed with the FPC a proposed $18.2 million, or 33½ per cent annual wholesale natural gas rate increase. The higher rates would affect 95 wholesale customers in Mississippi, Alabama, Georgia and South Carolina. Southern Natural cited increases in its cost of service, mainly in the cost of purchased gas. The company is claiming a 6.8 per cent rate of return in lieu of the 6 per cent return upon which its present rates were computed.

In other actions the FPC directed Texas Gas Transmission Corporation to provide natural gas service to Central City, Kentucky. The FPC also directed Trunkline Gas Company to serve the cities of Clinton, LaCenter, Bardwell and Wickliffe, Kentucky.

U.S. Steel offers promotion aids

THIS YEAR U.S. Steel will again offer promotion aids for its annual "Operation Snowflake" campaign. Among them is a free promotion kit, which includes an eight-page plan book of tie-in ideas, reproduction art, a giant poster, appliance stickers, a newspaper ad mat, snowflake stencils, and a media list of all newspaper and TV stations where U.S. Steel will be urging customers to "Make It a White Christmas . . . Buy Her a Major Appliance."

Friendly competitors, James T. Coatsworth, commercial director of Edison Electric Institute (l.), and C. S. Stackpole, managing director of A. G. A., find a mutual interest in promotion of U.S. Steel's "Operation Snowflake" campaign

In addition, U.S. Steel is offering premium and display pieces which can be bought directly from the company at low cost. These include: polyethylene bags with festive ribbons for wrapping appliances; 52-piece "Snowflake" window decoration kits; iron-on felt snowflakes for skirts, aprons, tablecloths, etc.; silk-screened cloth calendars; streamers; and snowflake-shaped coasters.

The company is also making available a newspaper service kit, which has already been sent to the managing editors and advertising directors of all daily newspapers as well as to the 4,000 subscribers to Metro Newspaper service. Besides black-and-white ad mats, the kit contains color ad mats at no charge to all newspapers that can use them. Now that the promotion is well established, space formerly devoted to explaining it is instead available for selling helps. These include completely prepared pattern advertisements for utilities, retailers, distributors, banks, and trade associations.

All of these materials may be obtained from Robert C. Myers, director, market development division, United States Steel Corporation, Pittsburgh 30, Pennsylvania.

Heating safety campaign

A CAMPAIGN to tell Los Angeles residents about unvented space heaters—their proper use and the dangers involved—was launched recently following a joint meeting of city and county officials and representatives of the Southern California Gas Company.

The group mapped out a drive to educate the public on precautions to be observed in the use of unvented, unapproved heaters, and to urge their replacement.

Attending the meeting at the gas company's Los Angeles headquarters building were officials from city and county health, fire, and building departments, and the county coroner's office.

The meeting was called to meet the problems of fire and carbon monoxide poisoning presented by the continued use of about 300,000 unvented space heaters in the area.

During the past five years an education program to tell the public the dangers of such obsolete heaters has been carried out by these government agencies in cooperation with the local gas utilities and other civic groups.

People in the area are being urged to have their heating equipment checked by the gas company or a competent service agency before temperatures drop to the mid-40's, when most of the deaths occur, and to remember to leave a window open when using unvented heaters.

Wins Robertshaw-Fulton utility contest

Dick Sievers (r.), Central Electric and Gas, receives $250 prize check from Robertshaw's John B. Selover as a winner of the Robertshaw contest among gas utility promotion men for the best local participation in this year's Mrs. America competition. L. D. Densmore of Central Electric and Gas looks on. Mr. Sievers won in medium-sized gas company category. Small company winner was A. G. Baker, Intermountain Gas, and large company winner was L. D. Burdick, Rochester Gas

Magic Chef sells commercial range operation to Cribben & Sexton

MAGIC CHEF, INC., the manufacturing division of the newly merged Magic Chef-Food Giant Markets, Inc., recently announced the sale of its commercial range operation in Cleveland, Ohio, to Cribben and Sexton Company of Chicago.

The purchase includes tools and dies, special machinery for the production of heavy-duty ranges, and the raw material and finished goods inventory. The purchase price was not disclosed.

Not involved in the transaction, however, are Magic Chef's physical properties in Cleveland.

Cribben and Sexton, manufacturers of Universal gas ranges, will be entitled to use the "Magic Chef" name on commercial ranges during an interim period. Otherwise, the "Magic Chef" name is not involved.

Magic Chef's domestic ranges are being produced at its Franklin, Tennessee, plant. Shipment of ranges during August set a new record for the plant, according to Cecil M. Dunn, president of Magic Chef-Food Giant Markets, Inc. He predicts even greater sales increases once the 1958 Magic Chef line is unveiled at the Merchandise Mart in January. The '58 line will include new popular-price models to appeal to a broader segment of the market.

Survey points to farm market as best LP-Gas customer

INDUSTRY SALES of LP-Gas and LP-Gas appliances to farm and small town markets will continue at record growth, absorbing an expected two per cent dip in LP-Gas sales to suburban areas.

These findings highlight a new marketing survey conducted by the National LP-Gas Council, industry advertising and promotion bureau, which polled 2,250 dealers to determine where LP-Gas and appliances now are being sold and where retail marketers expect them to be sold in the future.

A. H. Cote, council president and general sales manager of Suburban Propane Gas Corp., Whippany, New Jersey, said the survey indicates the nation's farmer remains industry's biggest customer, accounting for 45 per cent of all total dollar retail sales against 38 per cent for small towns and 17 per cent for suburban areas.

While this ratio will remain relatively stable for farm and small town markets, the council survey reports a projected two per cent drop in suburban LP-Gas sales.

According to Mr. Cote, the survey also indicated substantial differences in the farm-town-suburb ratio between various regions, with small town markets approximating 50 per cent of potential in some areas.

To pinpoint current industry marketing patterns, a questionnaire was sent by the council to LP-Gas retailers in all eight of the nation's geographic marketing areas.

The survey posed this question: "What percentage of your total goes to suburban, small town, or farm customers in each of four categories—(1) total gallons of LP-Gas; (2) total appliance and farm equipment sales; (3) total dollar sales; (4) total number of customers?"

Survey returns show that farm customers currently account for 44 per cent of dealer fuel sales, 47 per cent of appliance and farm equipment sales, 45 per cent of marketer dollar volume. Farmers comprise 42 per cent of marketer customers.

The LP-Gas small towns market accounts for 39 per cent of fuel, appliance and farm equipment sales, 38 per cent of total marketer volume, and equals the farm market in constituting 42 per cent of total customers.

Suburban LP-Gas markets currently reflect 17 per cent of marketer fuel sales and total dollar volume, and 14 per cent of appliance and farm equipment sales. Suburbanites comprise 16 per cent of dealer customers.

In determining future sales of LP-Gas, appliances and farm equipment, average figures supplied by LP-Gas marketers indicate the future farm market will show a one per cent increase over current total dollar sales, and appliance and farm equipment sales.

The survey also forecasts a five per cent rise in LP-Gas farm consumption and a six per cent rise in farm customers.

The future LP-Gas small towns market will also show a one per cent rise in marketer dollar volume and appliance and farm equipment sales. However, a three per cent drop in LP-Gas fuel consumption and a four per cent drop in number of small town customers are predicted.

Suburban LP-Gas markets in the near future will reflect a two per cent drop across the board in LP-Gas fuel consumption, appliance and farm equipment sales, total marketer dollar volume, and in number of customers, the survey revealed.

Servel stockholders approve sale of air conditioning division

J. C. HAMILTON, president of Arkansas Louisiana Gas Company, of Shreveport, Louisiana, handed two checks totaling approximately $3,675,000 to Duncan C. Menzies, president of Servel, Inc., of Evansville, on Sept. 20 to consummate the sale of Servel's air conditioning division to the gas company. Approval of the transaction had been voted by Servel's stockholders on Sept. 11.

Mr. Hamilton announced that Arkla Air Conditioning Corp., a Delaware corporation and a wholly owned subsidiary company of Arkansas Louisiana Gas Company, will manufacture and sell year-round gas air conditioning equipment, providing new capital to expand production, sales and promotion on a nationwide basis.

The units to be produced by the new Arkla Corp., will bear the trademark name, "Arkla-Servel," Mr. Hamilton said, and also will carry the trademarks "Sun Valley" and "All-Year."

He emphasized that the transaction involves only the gas air conditioning division of Servel and not the appliance division, which manufactures gas refrigerators. The new company, Arkla, is in the year-round gas air conditioning business, he said, and added that "it will become a major factor in the national air conditioning field."

Mr. Hamilton said that all organization details of Arkla had been completed, "except for the sales force, which will be greatly expanded." The sales headquarters will be located in Little Rock, Arkansas, home office of W. R. Stephens, chairman of the board of Arkansas Louisiana Gas Company, who also will be chairman of Arkla. Mr. Hamilton said that Mr. Stephens is expected to "take an active leadership in the air conditioning sales organization."

After a short period of shutdown necessitated by the take-over by Arkla Corp., full production will get under way at the Evansville plant. This will include the 3½-ton Sun Valley year-round heating and cooling units for homes, the new 5-ton Sun Valley unit, and the 25-ton water chiller for commercial and industrial uses and for large homes.

The new 5-ton unit will be a greatly improved model, considerably reduced in size and weight. A working inventory of 3½-ton Sun Valley units and 25-ton water chillers is sufficient to cover the shutdown period.

Mr. Hamilton will be president of the new Arkla Corp., and Mr. Stephens will be chairman of the board. Other officers of the new corporation are: D. W. Weir, vice-president in charge of operations; E. N. Henderson, vice-president in charge of research and development; F. L. Holleman, secretary; and James E. Chisum, treasurer. All four of the latter hold comparable positions in the gas utility and are residents of Shreveport.

Mr. Hamilton announced the following initial appointments from among personnel of the former Servel division:

L. E. Walbridge, manager of manufacturing; R. F. Sheets, purchasing agent; R. E. Davis, service manager; L. F. Fisher, manager of inspection and quality control; Allen Apple, personnel manager.

Manufacturing, purchasing, accounting, and research and development will remain in the Evansville plant which includes some 500,000 square feet of floor space on 14 acres of land.

Approximately 250 persons have been employed in the air conditioning plant and it is probable that the force will be increased in the months ahead as the new company expands production.

Gas industry to back air conditioning sales program

A CAMPAIGN to revitalize the market for gas air conditioning in 1958 has been mapped by the gas industry, in cooperation with the Arkla Air Conditioning Corporation.

Following a meeting with J. C. Hamilton, president of Arkla, the American Gas Association's Air Conditioning Promotion Committee has constituted itself a task force to mobilize the support of the nation's gas companies for the joint program.

A key agreement reached at the meeting, held at Dallas in September offered the prospect of a 20 per cent reduction in prices of residential air conditioning units provided gas utilities accept responsibility for a minimum quota of air conditioner sales.

To achieve this goal, each member of the A. G. A. committee has been assigned a personal quota, for which he is to obtain assurances from gas utilities in his area. In addition, a series of regional symposia will be held across the country early in 1958. At these meetings, committee members and Arkla representatives will acquaint gas utility managements with the reasons and requirements for entering and becoming a factor in the air conditioning market. The symposia will cover both residential and commercial-industrial air conditioning, and will include special sessions on sales and operation.

Other action by the committee included measures to promote acceptance and use of gas air conditioning equipment. One such step was endorsement of an A. G. A. proposal to appoint a sales promotion representative in Washington, D. C., to represent the gas industry with government. Plans for national advertising and promotion of air conditioning by A. G. A. were reviewed. Case histories of successful gas company air conditioning advertising and promotion campaigns were to be placed at the disposal of Arkla and any other interested gas air conditioning manufacturers.

A vote of confidence was given to the officers of the Arkla organization. Mr. Hamilton outlined the policies which Arkla will follow.

A very vigorous research program will be coordinated with the A. G. A. research program and that of the Southwest Research Institute.

Mr. Hamilton expressed willingness of Arkla to work with any other manufacturer to produce an attractive gas air conditioning unit. Arkla plans to raise the heating capacity of the five-ton direct fired unit from its present 96,000 Btu to 144,000 Btu for use in the northern U. S.

In a report on progress of the A. G. A. air conditioning research program, Allen Schrodt, director of A. G. A.'s PAR Plan, said that A. G. A. would reach its goal for this year by having at least three operating experimental units of new air conditioning systems ready for demonstration to interested manufacturers by the end of 1957.

At least nine manufacturers were reported actively interested in one or more of the new gas air conditioners under development.

Utility aids bakers in state fair exhibit

A GAS-EQUIPPED model bakery proved such a hit at the 1957 Michigan State Fair that retail bakers have asked that it be made a permanent exhibit. Fair officials have given tentative approval.

The bakery was erected and operated at the exposition as an experiment, by the Retail Bakers Association of Greater Detroit in cooperation with the Michigan Consolidated Gas Company.

While noting first-hand how a modern neighborhood bakery functions, fairgoers also purchased as many as 700 dozen doughnuts in one day.

Because of the exhibit's success, the bakers association plans to enlarge the permanent wooden building housing the bakery to 20 by 60 feet.

The bakery will be located in the center of the grounds where the association hopes to have it in operation; also at large automobile shows, circuses and trade expositions.

John Goward, a member of the Michigan Consolidated industrial sales staff, serves as secretary of the Retail Bakers Association of Greater Detroit. The more than 100 independent retail bakers and other members have re-elected him for several terms.

Michigan Consolidated assisted bakers in the installation of a gas-fired oven and fryers at the exhibit, and donated use of an automatic gas water heater. The gas company also aided in promotion of the event.

Among the special visitors at the model bakery was Gov. G. Mennen Williams of Michigan. He was presented with a cake.

Wins advertising award

OKLAHOMA NATURAL Gas Company has been named winner of the 1957 "Socrates" award for public utility advertising, it has been announced by Vincent Edwards and Company, Boston.

The "Socrates" award for outstanding utility advertising is presented each year to a company named by the sponsoring Boston firm.

Robert C. Kumler, advertising manager of Oklahoma Natural, was named in the 39th annual award which carries the inscription: "For consistent excellence in newspaper advertising during the past 12 months."

Every utility company in the United States and Canada is eligible for the award. Last year it was won by the Cincinnati Gas and Electric Company.

G. J. Tankersley elected president of Western Kentucky Gas Company

G. J. Tankersley

G. J. TANKERSLEY was last month elected president and a director of Western Kentucky Gas Company and its subsidiary. He was formerly executive vice-president and a director of the Gas Light Company of Columbus, Georgia.

Employed by Gas Light Company in 1949 as an industrial engineer, Mr. Tankersley progressed to chief engineer in 1953, was elected executive vice-president in 1954 and a year later was elected a director.

From 1947 to 1949, Mr. Tankersley was a member of the faculty of the Alabama Polytechnic Institute mechanical engineering department. Prior to that time he served as an officer in the Naval Air Corps. He is a graduate of Alabama Polytechnic Institute with a B.S. degree in engineering.

Active in industry affairs, Mr. Tankersley is currently chairman of the Southern Gas Association Heating and Air Conditioning Committee, a member of the Southern Standard Building Code Gas Committee and a member of the American Gas Association Air Conditioning Promotion Committee. He is a past member of the A. G. A. National Gas Industry Television Committee. In 1953 he was awarded special recognition from the Southern Gas Association for "outstanding contributions to the southern gas industry for work done in producing the Southern Standard Building Code, part 11 (Gas)." In addition, he has published several articles in leading gas industry publications.

Combs retires as A. G. A. Section secretary, Murray succeeds

MAHLON A. COMBS, secretary of the A. G. A. Industrial and Commercial Gas Section, retired on Oct. 1; Ralbern H. Murray succeeds him. Mr. Combs, who has spent his entire business career in the gas industry, will continue to serve A. G. A. full-time on contract as a consultant on Utilization Bureau service manuals.

Following graduation from the Stevens Institute of Technology, Mr. Combs joined New York's Consolidated Gas Company. He later served as a captain in the Tank Corps during World War I, after which he entered the fields of gas lighting, space heating, and industrial heating.

He joined the American Gas Association in 1945, after service with the Maxon Premix Burner Company as industrial equipment salesman, the American Radiator and Standard Sanitary Corporation as district representative, and the American Gas Products Corporation as general sales engineer.

Mr. Combs spent six months at A. G. A. as assistant secretary of the Industrial and Commercial Gas Section, and in 1946 was promoted to secretary. During his 11 years in this position, he initiated various projects including the highly successful Industrial and Commercial Gas Schools, and organized the Hall of Flame, of which he is a member.

Mr. Murray, the new Section secretary, has been assistant secretary of the Section since January.

Before that he was an engineer with the A. G. A. Utilization Bureau for six years, except for a two-year period in the Air Force.

Mr. Murray holds an M.S. and a B.S. degree from New York University.

Personal and otherwise

Kern appointed to new PCGA position

J. E. KERN has been appointed director of manufacturer programs of the Pacific Coast Gas Association. In his new position, Mr. Kern will be responsible for all phases of an expanded manufacturers' promotional program on the West Coast designed to stimulate gas appliance sales. Mr. Kern has had many years of experience in the gas industry, the last ten years as assistant managing director of PCGA.

Name Barbara Tracy home service director

BARBARA TRACY has been appointed home service director for The Hartford Gas Company. She succeeds Miss Alyce Salisbury, who has resigned to operate her own business. Mrs. Tracy has had extensive experience in the home economics and food administration field, having been food and management consultant with the American Hotel Association and restaurant manager with the Sheraton, Knott, and Kestenberg chains. Mrs. Tracy is a graduate of the Missouri School of Mines with a B.S. degree in electrical engineering. She holds an M.S. degree in food administration from Columbia.

Hahn retires

HARRY S. HAHN, who rose from meter reader to an assistant treasurer of the Ohio Fuel Gas Company, retired Oct. 1. Since 1943, Mr. Hahn has managed customer accounting and collecting operations for Ohio Fuel. Mr. Hahn's career with the gas company began 40 years ago when he was hired as a meter reader by the old Columbus Gas and Fuel Company, which later became part of Ohio Fuel. He later worked as a ledger clerk, and credit manager for the company's Columbus district. In 1932 he was named general credit manager for Ohio Fuel. He was promoted to manager of customer accounting and collecting 11 years later. He was elected an assistant treasurer of the company in 1950. In 1954 Mr. Hahn was cited for his outstanding work in the field of customer accounting and collecting, and was presented A. G. A.'s Order of Accounting Merit.

Garvens promoted

HAROLD C. GARVENS, chief revenue accountant for the Milwaukee Gas Light Company, has been promoted to the post of assistant secretary-treasurer of the company. He succeeds Robert J. Johnson who retired Sept. 1 after 52 years with the firm. Mr. Garvens has been with the gas company since 1924 when he joined the company as a ledger clerk. He rose through the ranks of the accounting department. He will continue to supervise the machine accounting, customers' accounting, payroll and meter reading departments, in addition to his new responsibilities. Mr. Garvens is chairman of the A. G. A. Customer Accounting Committee. The company also announces that Lloyd J. Klein has taken over the duties of the newly created post of controller in addition to his duties as vice-president of research and planning.

Barnett retires

R. G. Barnett has resigned as a director of Portland (Ore.) Gas & Coke Company and retired as vice-president, because of ill health. Mr. Barnett has been associated with the utility since 1938 in charge of customers' service activities. He was elected a director in 1946. Mr. Barnett had been in Brazil for nine years as a director of Emprezas Electricas Brasileiras, before he began his career with Pacific Gas & Electric Company at San Francisco in 1922. He was a director of American Gas Association from 1942 to 1951, then served on the Advisory Council through 1954. He was chairman of the A. G. A. Publicity and Advertising Committee from 1947 to 1951, and also served on the A. G. A.'s National Advertising Committee in 1945 and again from 1951 to 1954. He was a director of Pacific Coast Gas Association from 1946 to 1948.

Names in the news—a roundup of promotions and appointments

MANUFACTURER

Robertshaw-Fulton Controls Company announces that **Beverly D. Taylor,** formerly controller, has been appointed treasurer. **John C. C. Byrne,** controller of the company's Grayson controls division, succeeds Mr. Taylor as controller. **Walter H. Steffler,** who resigned as treasurer, will continue as secretary, and **James A. Witt** has been appointed assistant secretary.

Surface Combustion Corporation announces the election of three men as vice-presidents: **E. P. Heiles,** controller; **C. Cone,** chief engineer, industrial divisions; and **J. I. Trimble,** chief engineer, Janitrol divisions.

The appointment of **Alvan Markle** as director of purchases has been announced by the Walworth Company. He will be responsible for establishing procurement policies and procedures and for functional control of unit purchasing directors and agents.

John R. Lenox, formerly an administrative official of Minneapolis-Honeywell Regulator Company, has been elected vice-president in charge of operations of its wholly-owned subsidiary, Datamatic Corporation.

Norge Division of Borg-Warner Corporation reports five recent appointments. **William D. Stroben** is the new director of advertising, with responsibility for national and cooperative advertising on home appliances. **Thomas P. Hyde** is the new national service manager, with responsibility for distributor, dealer, and field product service matters. **George A. Lubenow** is the new national kitchen appliance merchandiser; he will assist in the administration of sales plans and programs for refrigerators, home freezers, and ranges. New assistant to the vice-president of distribution is **John H. Moran,** whose past employment includes 20 years with Philco Corporation. **Edgar A. Dunham Jr.** has been appointed Eastern utility gas representative, with an area including New York, New Jersey, and New England.

W. T. Halket, formerly general sales manager of domestic water heaters, was named to the newly created position of marketing director for the Permaglas division of A. O. Smith Corporation. **J. W. Burleson,** formerly general sales manager of heating and air conditioning equipment, was named general sales manager for the Permaglas division.

Claire G. Ely has been elected vice-president in charge of marketing of the Maytag Company, succeeding **Roy A. Bradt** upon his retirement last month. Succeeding Mr. Ely as general sales manager is **Gerald E. Ankeny.** In addition, **Edwin F. Kallenberg Jr.** has been named a regional manager in the Cincinnati branch. Maytag also announces the creation of a department designed to coordinate relationships with utilities. It will be headed by **B. B. Turner,** now manager of utility relations. He was formerly a Maytag salesman.

Marshall Poag, associated with Servel for many years, has joined **M. M. Hedges** Manufacturing Company as Southeastern district manager of its gas utility division.

George W. Hoffmeister has been named general superintendent of Minneapolis-Honeywell Regulator Company's new plant at Fall River, Massachusetts.

The Worthington Corporation reports three promotions in its marketing division. **William C. Cheek,** formerly manager of the Chicago district office, has been appointed Midwest region sales manager. **John H. Loomis** replaces Mr. Cheek in Chicago. Replacing Mr. Loomis as St. Louis district manager is **Hollis H. Wise.**

American Meter Company has named **J. P. Wilson III** to the position of sales representative of the Atlanta sales district and **Clifford E. Alden** to the position of sales engineer for the Wynnewood, Pennsylvania, sales district.

UTILITY

Northern Natural Gas Company announces the appointment of **Joseph C. Plourde** as assistant treasurer and **Clyde C. Copper** as superintendent of measurement. Mr. Plourde was previously manager of the public utilities research division of the National Securities and Research Corporation of New York. Mr. Copper, who has 25 years' service with Northern Natural, succeeds **J. L. Griffin** who retired Aug. 31.

Charles V. McCaffrey has been elected vice-president in charge of gas operations for the Blackstone Valley (R. I.) Gas and Electric Company.

The election of **John T. Bills** as vice-president—corporate relations of Peoples Gas System of Florida has been announced. As owner of a business and public relations consulting firm, he had been a consultant to Peoples Gas System for the past eight months.

A newly elected member of the board of Southern California Gas Company is **Courtlandt S. Gross,** president of Lockheed Aircraft Corporation.

J. N. Clayton Jr. has been appointed manager of the rate and regulatory department of Arkansas Louisiana Gas Company. He succeeds **M. D. LaGrone,** who was also assistant secretary of the utility, and who has resigned to become treasurer and vice-president of Consolidated Gas Utilities Corporation. New assistant manager of Arkansas Louisiana's rate and regulatory department is **T. M. Elgin.**

Upon the retirement of **W. J. Becker, J. L. Slusser** was promoted to gas distribution-engineering supervisor of the Long Island Lighting Company.

Columbia Gas System announces the retirement of two men with 40 years of service each: **Clair H. Lewis,** who started with what is now the Ohio Fuel Gas Company, and who has been senior engineer with Columbia Gas System Service Corporation for the past 20 years; and **Clyde D. Alstadt,** who also started with Ohio Fuel, and who was most recently a supervisory engineer in the gas engineering department of the Columbia Gas System Service Corporation.

Carl A. Linde has been promoted to the newly created position of staff planning engineer at Washington Natural Gas Company. **Leonard Voelker** will succeed him as northern division commercial sales manager. **Dave M. Barrett,** industrial sales manager, was named industrial and commercial sales manager.

O. G. Howe, engineer on the general office staff of the Oklahoma Natural Gas Company, has been promoted to mechanical supervisor—compressor stations. He replaces **D. R. Alley,** who has retired.

Lone Star Gas Company announces the appointment of **Charles E. Putman Jr.** to the newly created post of field superintendent; **Seth Davis** will succeed Mr. Putman as superintendent of the Joshua Compressor station.

PIPELINE

Robert M. Hoffer has been appointed controller of Michigan Wisconsin Pipe Line Company and American Louisiana Pipe Line Company. He will also serve as controller of the American Natural Gas Service Company, which performs financial, engineering, and other services for the subsidiaries of the American Natural Gas Company system. Mr. Hoffer has been associated with the accounting matters of the American Natural Gas Company system for the past eight years.

W. E. Brown, superintendent of compressor design engineering for Texas Gas Transmission Corporation, retired after 30 years of engineering work. This has included employment with Panhandle Eastern Pipe Line Company, Great Lakes Pipeline Company, and Michigan Wisconsin Pipeline Company. He joined Texas Gas in 1949.

OTHER

D. A. Reynolds has retired from his post as chief, coal carbonization section, at the U. S. Bureau of Mines' central experiment station in Pittsburgh. He was with the Bureau of Mines for over 34 years, and was instrumental in the development of the Bureau of Mines-A. G. A. carbonization test for coke, yields of by-products, and gas. He is the author or co-author of 125 publications on coal and coke.

Fred W. Argue, vice-president and engineering manager, and **Edward J. Ford,** vice-president and senior construction manager, both of Stone & Webster Engineering Corporation, have been elected directors of that firm.

John H. Kime, superintendent of the production and storage department of United Fuel Gas Company, has joined an affiliated company—Preston Oil Company—as vice-president.

The appointment of **Francis J. Serbek** as chairman of the Committee on Public Utilities Accounting of the New York State Society of Certified Public Accountants has been announced.

New director of the utilities division of the Georgia Public Service Commission is **Matt L. McWhorter.** He succeeds **N. Knowles Davis,** who is now with the Tennessee Gas Transmission Company.

Dalbeck named president of 7 companies

H. L. Dalbeck

HAROLD L. DALBECK has been appointed head of the New England Electric System's gas division and will be president of the system's seven gas companies in Massachusetts. They are: Central Massachusetts Gas, Lawrence Gas, Mystic Valley Gas, Northampton Gas, North Shore Gas, Norwood Gas and Wachusett Gas. He succeeds Edward G. Twohey, who becomes vice-president of New England Electric's Rhode Island subsidiary, The Narragansett Electric Company in Providence.

Mr. Dalbeck, who has been assistant treasurer of New England Electric's subsidiaries operating in the areas northeast of Boston, will be succeeded by Norman B. Macaulay, auditor of North Shore Gas and Essex County Electric Company.

Mr. Dalbeck's first position in the utility business was as an accountant with Worcester Gas Light Company in 1922. He was transferred to Cambridge in 1927. After joining New England Electric System he became treasurer of New England Power Service Company, which position he held until he was named assistant treasurer for New England Electric companies in northeastern Massachusetts.

Mr. Dalbeck is a graduate of Northeastern University and a member of the American Gas Association.

Fouse treasurer

RALPH W. FOUSE, vice-president and a member of the board of directors of the Brooklyn Borough Gas Company, has been named to the additional post of treasurer. At the same meeting, Miss Amelia H. Martin, formerly assistant secretary, was appointed secretary. Miss Elizabeth C. Hall, formerly assistant treasurer, was appointed assistant treasurer and assistant secretary. Mr. Fouse will be the 1958 chairman of the Rate Committee of the American Gas Association.

Scanlon on board

JAMES A. SCANLON, a vice-president of Columbia Gas System Service Corporation, has been elected to the company's board of directors. He has also assumed the duties of vice-president—rates following the retirement of E. R. Conner on Sept. 1. Mr. Scanlon came to the system's New York office in 1955 from The Ohio Fuel Gas Company in Columbus, Ohio, one of the Columbia Gas System subsidiaries, where he had been treasurer and subsequently a vice-president.

OBITUARY

David Barrett

industrial sales manager of the Washington Natural Gas Company, Seattle, died Aug. 31. Before joining Washington Natural this year, Mr. Barrett was for several years associated with the Washington (D. C.) Gas Light Company as industrial sales supervisor, and with the Lowell (Mass.) Gas Company as manager of the industrial and commercial department.

He was a member of A. G. A.

Edward S. Brock

who retired in 1951 as assistant to the comptroller, electric and gas comptroller's department, at Public Service Gas and Electric Company of New Jersey, died recently at the age of 76.

Mr. Brock started in the utility business in 1901. After holding various positions, he became assistant to the general auditor of Public Service in 1926, and assistant to the comptroller in 1948.

Previous to his retirement, he was active in A. G. A. and the New Jersey Gas Association.

Paul Howard

45, died recently of a heart ailment. For the 15 years previous to his death, Mr. Howard lived in Gainesville, Georgia, where he managed the property of the Georgia Gas Company as well as that of the Carolina Central Gas Company in Hendersonville, North Carolina, and the South Carolina Gas Company, in Gaffney; all the companies are subsidiaries of the United Cities Utilities Company of Chicago. Recently this firm, through a merger, became the United Cities Gas Company.

Mr. Howard is survived by his parents, his wife Margaret, and two daughters.

W. R. Mabee

vice-president and assistant general manager of Tappan Stove Company, died unexpectedly last month at the age of 48. Mr. Mabee was serving on Tappan's Executive Committee at the time of his death, and also as a member of the board.

Mr. Mabee became affiliated with Tappan immediately after graduation from high school, working first in the press department, then in the production department. Later he was named production manager. Then followed his promotion to assistant plant superintendent, and several years ago he was named plant superintendent. In addition, he was executive vice-president of the O'Keefe & Merritt Company, and a director of the Certified Gas Equipment Company.

CONVENTION CALENDAR

1957

NOVEMBER

4-8 •National Metal Exposition, Chicago, Ill. (A. G. A. will exhibit)

11-15 •National Hotel Exposition, Coliseum, New York City. (A. G. A. will exhibit)

13-15 •American Standards Association Conference and Annual Meeting, San Francisco, Calif.

14-16 •The American Society of Refrigerating Engineers, Semi-Annual Meeting, Shoreland Hotel, Chicago, Ill.

18-22 •National Warm Air Heating and Air Conditioning Association, Hotel Morrison, Chicago, Ill.

DECEMBER

1-6 •The American Society of Mechanical Engineers, Annual Meeting, Hotel Statler, New York City.

1958

JANUARY

6-8 •A. G. A. Home Service Workshop, Hotel Radisson, Minneapolis, Minn.

27-29 •American Society of Heating and Air Conditioning Engineers, Annual Meeting, Pittsburgh, Pa.

MARCH

17-21 •National Association of Corrosion Engineers, Annual Conference and Exposition, San Francisco, Calif.

20-21 •New England Gas Association, Annual Meeting, Hotel Statler, Boston, Mass.

24-26 •Mid-West Gas Association, Broadmoor Hotel, Colorado Springs, Colo.

27-28 •Oklahoma Utilities Association, Annual Convention, Biltmore Hotel, Oklahoma City, Okla.

31-April 2 •Gas Appliance Manufacturers Association, Annual Meeting, The Greenbrier, White Sulphur Springs, W. Va.

31-April 2 •A. G. A. General Management Section Conference, The Shoreham, Washington, D. C.

APRIL

8-10 •A. G. A. Sales Conference on Industrial and Commercial Gas, Hotel Schroeder, Milwaukee, Wis.

14-16 •National Conference of Electric and Gas Utility Accountants, Shamrock-Hilton Hotel, Houston, Texas.

17-18 •Indiana Gas Association, Annual Convention, French Lick-Sheraton Hotel, French Lick, Ind.

28-30 •Southern Gas Association, Annual Convention, Dallas, Texas.

Personnel service

SERVICES OFFERED

Gas Engineering Executive—B.Sc. in Chemical Engineering. Broad experience in engineering, operations, and management of transmission and distribution systems. Thorough knowledge of pipeline design, construction, economics, contracts, customer relations, and utilization. Author of many technical articles and well versed in report writing. Returning to U.S. in October having been chief engineer and superintendent of gas transmission pipeline overseas. Desires executive operating or planning position in gas consulting, construction, or operations. International contacts and excellent references. **1881.**

Sales Manager—Approximately **20 years** of utility experience, 11 years' sales manager's experience on domestic and house heating appliances. Capable of complete organization and training of any utility sales department on domestic and house heating appliances. Preparation of sales and promotion budget—sales studies. Dealer promotion and training. General knowledge of advertising and campaign promotions. Top utility and manufacturers references. (46) Married. **1882.**

General or Operations Manager—27 years' experience in all phases of gas industry—last 7 in natural. Well known in industry. Available immediately. Details upon request. Married. (48) **1883.**

Pakistani wishes position as apprentice to learn of United States natural gas company operations. Educated at the University of Punjab with courses in Gas Technology. Westminster Technical College, London. Available after June 1958. **1884.**

Sales and Promotion Executive—20 years' experience in the field of advertising, promotion and sales. Ten years with a manufacturer of household gas appliances in advertising and selling capacity. Advertising agency experience as an account executive handling appliances. Have knowledge of and have worked extensively with distributors and dealers, also utilities. College graduate, veteran W.W.II. Married, one child. Complete resume of business background available on request. **1885.**

Factory Sales Representative—with over 20 years' experience, seeks new connection with a reputable manufacturer, promoting and merchandising domestic gas appliances, preferably in the New York-New Jersey areas. Top notch performance and references. **1886.**

General Sales Manager—Experienced in retail dealer, distributor and manufacturers sales management. 12 years with outstanding merchandising utility. Products sold—heating, cooling, water heaters, ranges, refrigerators, residential and commercial. **1887.**

ME Graduate with 8 years' management experience covering all phases of manufactured and natural gas operations, desires permanent position with live-wire, progressive company where advancement opportunity exists. Can competently manage medium sized company or head up department or branch of larger company. Outstanding personal qualifications and excellent relations with superiors, subordinates and the public. Will relocate. **1888.**

POSITIONS OPEN

Experienced home economist—with college degree in foods, for home service staff in one of the larger New England utilities. Send experience resume and personal data. Salary open. **0849.**

Gas Engineer—Connecticut utility wants an engineering graduate with some experience in gas production, distribution and customer service. Prefer man under 35. Submit complete resumé. Starting salary $7,000-$7,500 plus other benefits. **0851.**

Sales Engineer—excellent opportunity with expanding specialty manufacturer of cast iron gas boilers for aggressive man with background in the wet-heat field, to call on jobbers, contractors, architects, builders, utilities. Able to organize sales meetings and render technical field service. Willing to travel and relocate. Applications held in strict confidence. **0852.**

Compressor Station Engineer—large gas utility in Great Lakes area needs graduate engineer, preferably under 40, with some compressor station experience. Assistant to superintendent in design field engineering and other problems related to maintenance and operation of stations. Liberal benefits. Salary in line with education and experience. State personal and educational qualifications. **0853.**

Gas Engineer—outstanding opportunity for exceptional young gas engineers with interest in management and sales. Expanding staff of national firm of business and engineering consultants has room for ambitious men with general gas utility experience. Men selected will receive diversified consulting assignments, particularly in the fields of sales and market analysis, under close personal supervision of experts in the field. This is an opportunity to grow in a friendly atmosphere where initiative is encouraged and rewarded. **0854.**

A.G.A. in action

(Continued from page 7)

developments, the impact of competitive fuels on the gas industry, source of new capital for the industry, the attitudes of insurance and investment companies toward gas company securities, and a review of A. G. A. activities in combatting competition. Details regarding the meeting will appear in the November issue of the MONTHLY.

• A 1957 edition of the basic training booklet, *Home Service Home Calls,* has been published by the **Home Service Committee.** Types of home calls, their procedures of operations, and how-to-do-it information on specific equipment is discussed. The booklet is available from A. G. A. Headquarters at 25 cents a copy.

• An Index of Standard Designs and Practices as used by gas utilities in connection with various phases of construction and distribution work is being prepared by the **Subcommittee on Distribution Design and Development.** The Index will be available around Jan. 1 and will enable a company with a particular distribution problem to find a source of possible assistance.

• Gas dispatchers concerned with securing the most suitable and useful type of wall maps will be interested in a pamphlet to be published around Jan. 1, 1958, by the Operating Section's **Gas Dispatching Committee.** Based on a survey of 37 companies, the pamphlet describes types of maps which have proven most satisfactory and includes recommendations as to size, construction, details to be shown, etc.

• The **Gas Industry Development Committee** will honor all chairmen of the **Approval Requirements Committee** with an award of recognition. Forty-eight former chairmen and all future chairmen are to receive the award which will detail each awardee's service record on the committee. To be eligible, a member must have served as committee chairman for one or more terms.

• Revisions to the electrical provisions of the American Standard Approval Requirements for Central Heating Gas Appliances, Volumes I, II, III, and IV, as adopted by the **Central Heating Gas Appliance Requirements Subcommittee,** have been approved by the **Approval Requirements Committee** and become effective Jan. 1, 1958. Equipment manufacturers may have approval tests performed by the A. G. A. Laboratories under these new provisions at any time prior to the effective date of the provisions. Copies of the provisions may be obtained from the A. G. A. Laboratories.

• Revised requirements for domestic gas incinerators to cover approval of smokeless-odorless types, as adopted by the **Subcommittee on Approval Requirements for Domestic Gas Incinerators,** are now out for criticism. These specifications become effective Jan. 1, 1958.

• The **Subcommittee on Installation of Gas Piping and Gas Appliances in Buildings** met Sept. 4-6 to review the Z21.30-1954 installation standard. At the request of the LP-Gas Association, the subcommittee plans to expand Z21.30 to include coverage for undiluted liquefied petroleum gas. The objective: a single installation standard available throughout the industry.

A.G.A. advisory council

E. R. ACKER.....Poughkeepsie, N. Y.
B. C. ADAMS.....Kansas City, Mo.
FRANK H. ADAMS.....Toledo, Ohio
F. M. BANKS.....Los Angeles, Calif.
L. L. BAXTER.....Fayetteville, Ark.
L. E. BIEMILLER.....Baltimore, Md.
DUDLEY B. W. BROWN...New York, N. Y.
J. H. CARSON.....Cleveland, Ohio
GLENN W. CLARK.....St. Louis, Mo.
SHELDON COLEMAN.....Wichita, Kans.
J. H. COLLINS SR.....New Orleans, La.
J. F. DONNELLY SR.....Milwaukee, Wis.
E. H. EACKER.....Boston, Mass.
E. R. EBERLE.....Newark, N. J.
RALPH L. FLETCHER.....Providence, R. I.
N. HENRY GELLERT.....Seattle, Wash.
W. G. HAMILTON JR.....Philadelphia, Pa.
R. M. HESKETT.....Minneapolis, Minn.
FREDERIC O. HESS.....Dresher, Pa.
J. K. HORTON.....San Francisco, Calif.
PAUL KAYSER.....El Paso, Texas
A. W. LUNDSTRUM.....Columbus, Ohio
EARLE J. MACHOLD.....Syracuse, N. Y.
H. N. MALLON.....Dallas, Texas
J. F. MERRIAM.....Omaha, Neb.
L. B. RICHARDS.....Harrisburg, Pa.
LOUIS RUTHENBURG.....Evansville, Ind.
FRANK C. SMITH.....Houston, Texas
E. CARL SORBY.....Rockford, Ill.
R. G. TABER.....Atlanta, Ga.
PAUL R. TAYLOR.....Houston, Texas
TOM P. WALKER.....Houston, Texas
T. WEIR.....Chatham, Ontario
GEORGE E. WHITWELL...Philadelphia, Pa.
CHARLES G. YOUNG....Springfield, Mass.
B. H. WITTMANN.....Chicago, Ill.

PAR COMMITTEE

Chairman—Wister H. Ligon, Nashville Gas Co., Nashville, Tenn.

General Promotional Planning Committee

Chairman—Christy Payne, Jr., The Peoples Natural Gas Co., Pittsburgh, Pa.

General Research Planning Committee

Chairman—Samuel Green, The Brooklyn Union Gas Co., Brooklyn, N. Y.

General Public Information Planning Committee

Chairman—Thomas H. Evans, Equitable Gas Co., Pittsburgh, Pa.

FINANCE COMMITTEE

Chairman—E. R. Acker, Central Hudson Gas & Electric Corp., Poughkeepsie, N. Y.

LABORATORIES MANAGING COMMITTEE

Chairman—N. B. Bertolette, The Hartford Gas Co., Hartford, Conn.

APPROVAL REQUIREMENTS COMMITTEE

Chairman—H. B. Noyes, Washington Gas Light Co., Washington, D. C.

Associated organizations

GAS APPLIANCE MANUFACTURERS ASSOCIATION

Pres.—Julius Klein, Caloric Appliance Corp., Philadelphia 7, Pa.
Man. Dir.—Harold Massey, 60 East 42nd St., New York 17, N. Y.

CANADIAN GAS ASSOCIATION

Pres.—H. C. Darroch, Moffats, Ltd., Weston, Ontario.
Man. Dir.—W. H. Dalton, 6 Hayden St., Toronto 5, Ontario.

FLORIDA-GEORGIA GAS ASSOCIATION

Chrmn.—Joseph Frink, Florida Power & Light Co., Miami, Fla.
Sec.-Tr.—L. A. Friederick, Tampa Gas Co., P.O. Box 2562, Tampa, Fla.

ILLINOIS PUBLIC UTILITIES ASSOCIATION

Sec.-Tr.—T. A. Schlink, Central Illinois Light Co., Peoria, Ill.

INDIANA GAS ASSOCIATION

Pres.—Lyman H. Bell, Hoosier Gas Corp., Vincennes, Ind.
Sec.-Tr.—R. A. Steele, Citizens Gas & Coke Utility, 2020 N. Meridian St., Indianapolis, Ind.

THE MARYLAND UTILITIES ASSOCIATION

Pres.—Robert W. Wilson, Potomac Electric Power Co., Washington, D. C.
Sec.—Robert L. Smith, Lexington Building, Baltimore, Maryland.

MICHIGAN GAS ASSOCIATION

Pres.—George E. Ludwig, Michigan Consolidated Gas Co., Muskegon, Mich.
Sec.-Tr.—M. G. Kendrick, Michigan Consolidated Gas Co., Ann Arbor, Mich.

MID-WEST GAS ASSOCIATION

Pres.—Peter C. DeHaan, Iowa Power and Light Co., Des Moines, Iowa.
Sec.-Tr.—Everett E. Baxter, Central Electric and Gas Co., Lincoln, Neb.

NATURAL GAS AND PETROLEUM ASSOCIATION OF CANADA

Pres.—L. B. Mehlenbacher, Haldimand Gas Syndicate, Cayuga, Ontario.
Sec. and Asst. Tr.—S. C. Hanna, United Gas & Fuel Co. of Hamilton, Hamilton, Ontario.

NEW ENGLAND GAS ASSOCIATION

Pres.—E. G. Rhodes, New Britain Gas Light Co., New Britain, Conn.
Man. Dir.—Clark Belden, 10 Newbury St., Boston 16, Mass.

NEW JERSEY GAS ASSOCIATION

Pres.—T. H. Kendall, South Jersey Gas Co., Atlantic City, N. J.
Sec.-Tr.—Ralph E. Martin, New Jersey Natural Gas Co., Asbury Park, N. J.

OKLAHOMA UTILITIES ASSOCIATION

Pres.—H. P. Hoheisel, Oklahoma Gas and Electric Co., Oklahoma City, Okla.
Sec.—Kate A. Niblack, 2415 Oklahoma Biltmore Hotel, Oklahoma City, Okla.

PACIFIC COAST GAS ASSOCIATION

Pres.—C. H. Gueffroy, Portland Gas and Coke Co., Portland, Ore.
Man. Dir.—Robert D. Scott, 2 Pine St., San Francisco 11, Calif.

PENNSYLVANIA GAS ASSOCIATION

Pres.—C. G. Simpson, Philadelphia Gas Works Div., United Gas Improvement Co., Philadelphia, Pa.
Sec.—R. W. Uhler, Harrisburg Gas Div., United Gas Improvement Co., Harrisburg, Pa.

PENNSYLVANIA NATURAL GAS MEN'S ASSOCIATION

Pres.—Christy Payne Jr., Peoples Natural Gas Co., Pittsburgh, Pa.
Sec.-Tr.—P. L. Kesel, Carnegie Natural Gas Co., Pittsburgh, Pa.

ROCKY MOUNTAIN GAS ASSOCIATION

Pres.—Paul W. Young, C. A. Crosta, Inc., Denver, Colo.
Sec.-Tr.—H. P. Risley, Public Service Company of Colorado, Denver 2, Colo.
Field Sec.—Roy G. Munroe, Rm. 16, 1300 Glenarm St., Denver 2, Colo.

SOUTHEASTERN GAS ASSOCIATION

Pres.—J. E. Connolly, The North Carolina Natural Gas Co., Reidsville, N. C.
Sec.-Tr.—Edward W. Ruggles, North Carolina State College, Raleigh, N. C.

SOUTHERN GAS ASSOCIATION

Pres.—Curtis M. Smith, Tennessee Gas Transmission Co., Houston, Texas.
Man. Dir.—Robert R. Suttle, 1524 Life of America Building, Dallas 2, Texas.

WISCONSIN UTILITIES ASSOCIATION

Pres.—S. Lloyd Nemeyer, Milwaukee Gas Light Co., Milwaukee, Wis.
Exec.-Sec.—Dale F. Hansman, 135 West Wells St., Milwaukee 3, Wis.

American Gas Association

HEADQUARTERS, 420 LEXINGTON AVE., NEW YORK 17, N. Y.

A. G. A. LABORATORIES • 1032 East 62nd Street, Cleveland 3, Ohio • 1425 Grande Vista Avenue, Los Angeles, Calif.
WASHINGTON OFFICE • Room 804, Securities Bldg., 729-13th St., N.W., Washington 5, D. C.

◀ Officers ▶

President	C. H. ZACHRY	Southern Union Gas Co., Dallas, Texas
First Vice-President	A. W. CONOVER	Equitable Gas Co., Pittsburgh, Pa.
Second Vice-President	ROBERT W. OTTO	Laclede Gas Co., St. Louis, Mo.
Treasurer	VINCENT T. MILES	Long Island Lighting Co., Mineola, N. Y.
Assistant Treasurer	JAMES F. DALY	Long Island Lighting Co., Mineola, N. Y.
Managing Director	C. S. STACKPOLE	American Gas Association, New York, N. Y.
Secretary	HAROLD S. WALKER, JR.	American Gas Association, New York, N. Y.

◀ Directors ▶

JOHN B. BALMER	New York, N. Y.	WISTER H. LIGON	Nashville, Tenn.
PHILIP E. BECKMAN	San Francisco, Calif.	DONALD C. LUCE	Newark, N. J.
EVERETT J. BOOTHBY	Washington, D. C.	WALTER T. LUCKING	Phoenix, Ariz.
F. D. CAMPBELL	Cambridge, Mass.	CHESTER L. MAY	Dallas, Texas
ORVILLE S. CARPENTER	Shreveport, La.	DEAN H. MITCHELL	Hammond, Ind.
MARVIN CHANDLER	Aurora, Ill.	ED PARKES	Shreveport, La.
CARL E. CLOUD	Little Rock, Ark.	F. T. PARKS	Denver, Colo.
STUART COOPER	Wilmington, Del.	JOHN C. PARROTT	Roanoke, Va.
R. E. CRAWFORD	St. Peter, Minn.	J. C. PETERSON	Pittsburgh, Pa.
C. H. GUEFFROY	Portland, Ore.	C. P. RATHER	Birmingham, Ala.
LYLE C. HARVEY	Syracuse, N. Y.	W. F. ROCKWELL, JR.	Pittsburgh, Pa.
J. J. HEDRICK	Chicago, Ill.	EDWARD H. SMOKER	Philadelphia, Pa.
J. E. HEYKE	Brooklyn, N. Y.	E. H. TOLLEFSON	Clarksburg, W. Va.
ROBERT A. HORNBY	San Francisco, Calif.	J. THEODORE WOLFE	Baltimore, Md.
D. E. KARN	Jackson, Mich.	DENNIS K. YORATH	Edmonton, Canada
JULIUS KLEIN	Philadelphia, Pa.		

◀ Section Chairmen ▶

Accounting Section	W. D. SWEETMAN	The Peoples Gas Light & Coke Co., Chicago, Ill.
General Management Section	LESLIE A. BRANDT	The Peoples Gas Light & Coke Co., Chicago, Ill.
Industrial and Commercial Gas Section	J. ROBERT DELANEY	The Cincinnati Gas & Electric Co., Cincinnati, Ohio
Operating Section	GROVE LAWRENCE	Southern California Gas Co., Los Angeles, Calif.
Residential Gas Section	W. D. WILLIAMS	New Jersey Natural Gas Co., Asbury Park, N. J.

◀ Association Staff ▶

Managing Director	C. S. STACKPOLE	Director, Public Information	JAMES M. BAKER
Assistant Managing Director	JOHN W. WEST, JR.	Secretary, Accounting Section	THOMAS J. SHARKEY
Assistant Managing Director	B. A. McCANDLESS	Secretary, General Management Section	VAUGHAN O'BRIEN
Director, A. G. A. Laboratories	FRANK E. HODGDON	Secretary, Industrial and Commercial Gas Section	RALBERN H. MURRAY
Secretary and Convention Manager	HAROLD S. WALKER, JR.	Secretary, Operating Section	J. STANFORD SEVERN
Controller	ROBERT J. CUTTING	Secretary, Residential Gas Section	F. W. WILLIAMS
Director of PAR Plan	ALLEN D. SCHRODT	Home Service Counsellor	JESSIE McQUEEN
Director, Promotion and Advertising	S. F. WIKSTROM	Director, Bureau of Statistics	DANIEL PARSONS
Advertising Manager	NORVAL D. JENNINGS	Utilization Engineer	C. GEORGE SEGELER
Promotion Manager	CHARLES R. BOWEN	Safety Consultant	RAUEL N. PAYNE
Manager, New Freedom Bureau	KENNETH F. MULDOON	Manager, Pacific Coast Branch Laboratories (Los Angeles, Calif.)	W. H. VOGEL
Commercial Promotion Manager	HAYES S. WALTER	Manager, Washington Office	CURTIS MORRIS
Manager, Hollywood Bureau	H. D. NICHOLSON		
Director, Research	THOMAS LEE ROBEY		
Research Consultant	DR. N. K. CHANEY		

PRINTED IN U. S. A.